CHILDREN'S AWARENESS OF THE PAST

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VOLUME ONE

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CHILDREN'S AWARENESS OF THE PAST

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(Appendices I to V, which contain facsimiles of all test papers, picture tests and questionnaires used in the course of the project are separately bound, in Volume Two of the thesis).

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ABSTRACT OF THE THESIS

This study is about high expectation of Primary School children's abilities, with particular reference to their perception of historical time. Earlier research in this field, mostly negative, has been taken as the basis of a new approach involving larger samples and a longitudinal study over a period of six years. More than 1250 children in thirty schools were continuously engaged from the ages of seven to eleven. It was intended to discover whether a specific curriculum, devised to develop children's skills in recognising and interpreting evidence from the past, would produce any significant improvement in performance with specially devised tests. We could also discover whether an untutored control group demonstrated latent skills in the same area of learning.

The major criteria of the study are the concepts of evidence, authenticity and time-placing, more particularly in terms of sequence and seriation rather than of duration. There has been no attempt to identify 'concepts of time', although reference is made to Piagetian-inspired investigations. The main concern has been with those skills which Primary School children might be expected to demonstrate, most importantly their development of expressive language.

A battery of twenty-five tests was developed from the curriculum offered to the classes year by year. These were, successively, picture seriation tests, picture-interpretation and documentary analysis. Each set of tests is the basis of a central Chapter of this thesis.

Certain conclusions are possible. Firstly, earlier findings have been substantially extended by means of larger samples over an adequate period of time. Secondly, the results of individual children and different schools are seen to differ widely. The influence of Zeitgeist is consequently examined by means of a computerized analysis, both of the whole pilot population and, more searchingly, of a random sample from that group.

Finally, average children in both pilot and control groups are found to command more ability between the ages of seven and eleven than was previously supposed. These skills are seen to be capable of continuous gradual development which responds to the systematic enrichment of a special curriculum. More should be done about this area of children's development in English Primary Schools.

Author's Note

I am deeply indebted to the Education Committee of the Metropolitan Borough of Dudley and to its Director of Education, John Buck, for their consent to my research within the Borough's Schools. Nevertheless, the views and educational ideas expressed throughout this thesis are personal and in no sense expound any official policy or viewpoint of the Dudley Education Authority, its representative members or officers. The anonymity of the Authority's Schools has been maintained throughout this thesis.

Wolverhampton
1st November 1980

JOHN WEST M.A.
Chief Inspector of Schools.

Fig.1

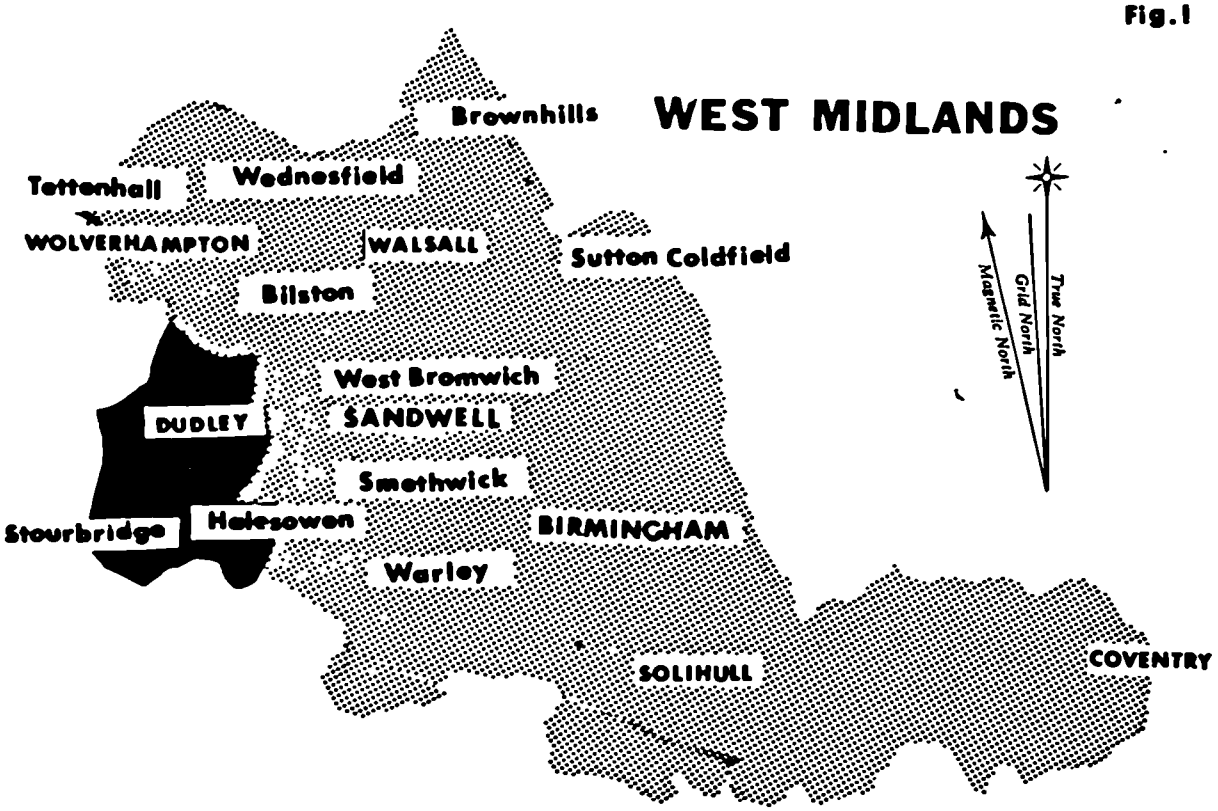
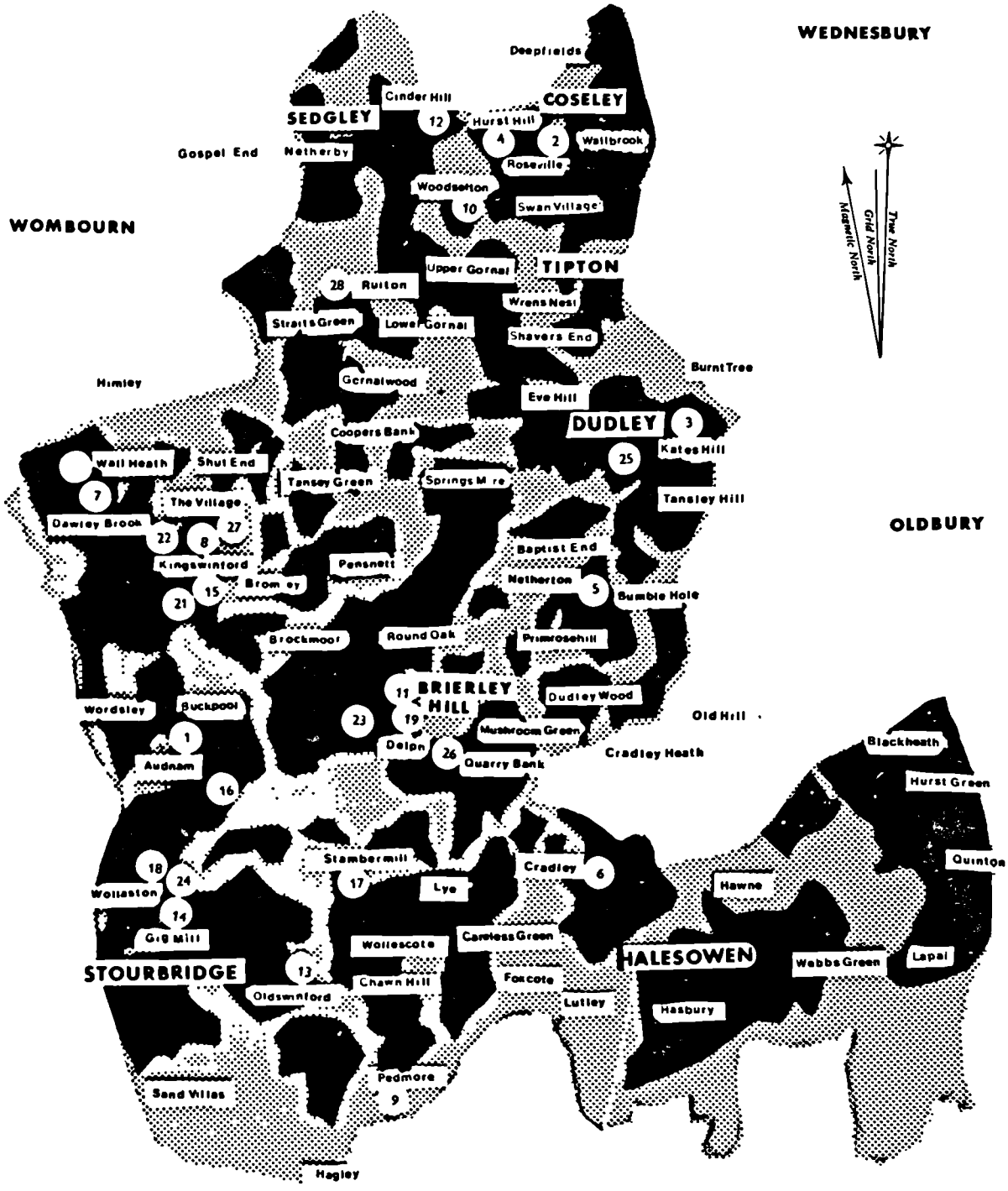

WEST MIDLANDS
Brownhills
Tettenhall
Wednesfield
WOLVERHAMPTON
WALSALL
Sutton Coldfield
Bilston
West Bromwich
DUDLEY
SANDWELL
Smethwick
Stourbridge
Halesowen
BIRMINGHAM
Warley
SOLIHULL
COVENTRY
Magnetic North
Grid North
True North
SCALE: 0 5 10 miles

Fig. 2



DUDLEY METROPOLITAN BOROUGH 1980

1 ¾ ½ ¼ 0 1 2 3 4 5 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000 Yards

CHAPTER ONE:
THE BACKGROUND OF THE STUDY

Dudley is a small Metropolitan Borough situated in the south-west of the West Midlands County. Its estimated population in 1980 is 302,000 with 56,157 children in schools; the total intake of the year-group now eleven-plus, who developed the project described in this thesis was 5,000 pupils. 159 schools of all types are administered by the Local Education Authority (1).

Dudley is an ancient borough. Its castle and the market which it overlooks are medieval; a ruined Priory stands on quiet lawns; the shopping precinct is modern; the back-streets are warrens of workshops. The slum areas of the central town were cleared and the townsfolk rehoused in housing estates of the 1930s to 1960s. Much of that land was reclaimed from industrial wasteland; the soot, smoke and heavy industry which gave the Black Country its name are no more. Dudley is a clean, well-planned town of character.

Once a County Borough in its own right, the town was substantially enlarged in 1967 by encroachment upon the south-west Division of Staffordshire. The Borough's schools increased by this re-organisation, from 40 to 101. A second phase of local government re-organisation in 1974 incorporated the townships of Stourbridge and Halesowen into the new Metropolitan Borough, a district now eight miles broad and ten miles from north to south (2). The number of the

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1. Statistics from the Planning and Welfare sections of the Local Authority.
2. See Fig. 2 on page vi.

Authority's schools thus increased again, by an additional 52 schools; with occasional closures, new buildings, amalgamations and other forms of change, the number of schools is now, as stated, 159 (3).

Comprehensive reorganization was introduced to the County Borough's schools in 1973, when a 5-8, 8-12 and 12-16/18 division was organized, introducing, for the first time, Middle schools, deemed 'Primary' at 8-12. Meanwhile, Worcestershire had reorganized the Halesowen schools on a 5-9, 9-13 and 13-18 basis; Stourbridge schools remained, as indeed they are today, on the more traditional lines of 5-7, 7-11 and 11-16. Since amalgamation with Dudley, however, in 1975 two Stourbridge Grammar Schools were replaced by a Sixth Form College. Thus, it can be seen that the present Metropolitan District comprises almost every known type of age-range in its schools.

This makes for a wealth of comparison and educational variety, as well as producing a measure of administrative confusion. Children aged between 7 and 12 years of age may, in different parts of the Borough, find themselves in any one of twelve different types of school: that is, 5-7; 5-8; 5-9; 5-11; 5-12; 7-11; 8-12; 9-13; 11-16; 11-18; 12-16 or 12-18. There is no doubt that individual age-groups, at say seven, ten or twelve, will as a result experience a broadly different Primary or Secondary education, depending upon the locality in which they live. It is impossible, in Dudley, to postulate a 'typical' Primary or Middle school for ten-year olds. The 'zeitgeist' referred to by Lovell (4) is infinitely variable from place to place, not only according to the personal differences and philosophies of different Head-teachers, but also, more arbitrarily, by administrative decree. These differences have been verified in a series of 26 general

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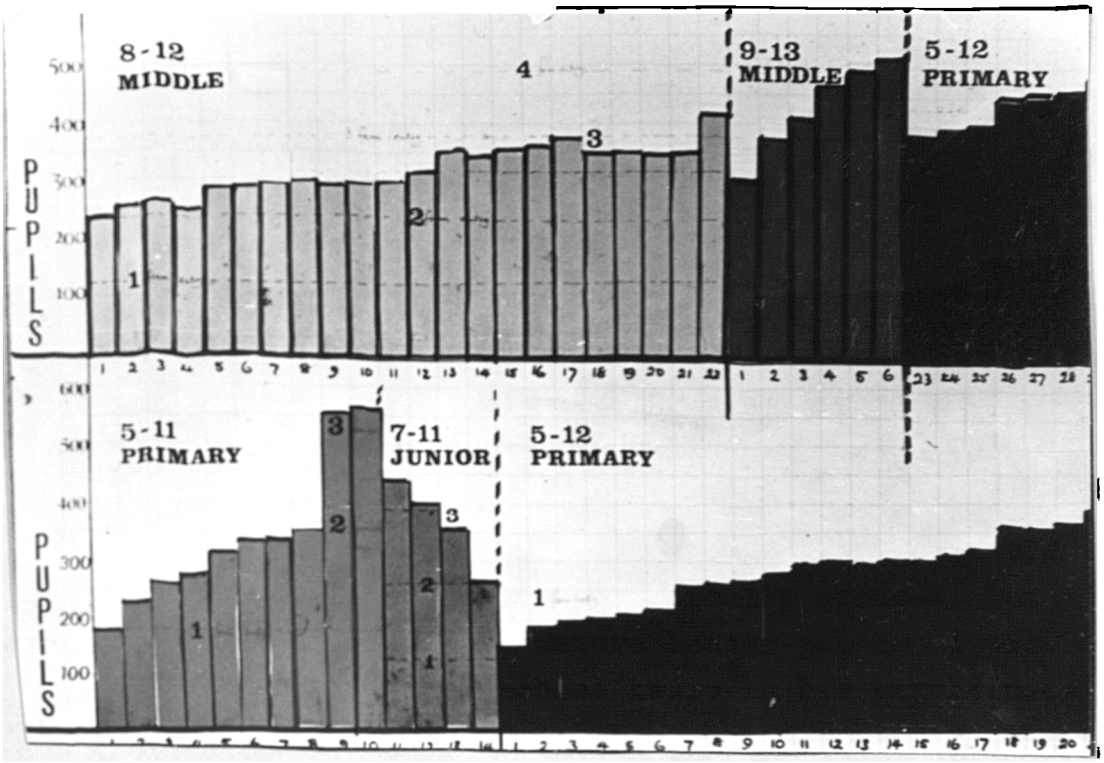
3. The Education Authorities' Directory, 1979. The School Government Publishing Co. Ltd. pp. 260-264.

4. Lovell K. A Follow-up Study of Inhelder and Piaget's 'The Growth of Logical Thinking': British Journal of Psychology No. 52:2. 1961. Page 152.

Inspections (5) carried out and continuing during the years 1974-1980. Fundamental variation in the range of staffing and material resources available, in the space and specialized facilities of different types of buildings, and above all, in the 'scale' of the schools, varying as they do, for the same age-groups, from total rolls of 200 to nearly 600 makes a set of totally different schools.

Fig 3 : Age-groups of LEA Schools : 5 - 13 years.



In an 'old' Infant school at Stourbridge a seven-year old is one of the 'top' class, possibly vertically grouped, but certainly seen as one of the mature leader-pupils of the school. In a Dudley First school he is in his penultimate year; in a Halesowen 'Primary' school he is well down the age-range, in the middle of the school. Any of these schools will be small communities of between 100-250 children, with a small female staff and a Headmistress. In a Dudley 'Primary' school, with an age-range of 5 to 12, the seven-year old is in a totally different type of organization, still moderately small

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5. Local Education Authority Inspection Reports. Nos: 1-25 October 1974 to March 1980, continuing. Also: Inspectors' Report to Education Committee, 1976-1979. Dudley Metropolitan Borough Education Services, December 1979. pp. 16-21

at about 300 pupils, but combined with a 'Junior' or 'Middle School' department. The teachers will be both men and women, the Head and his Deputy almost certainly male.

Similarly, at ten years of age, the pupil's lot in terms of differences in type, atmosphere and stability of school community will be considerable, either in the large four-form entry Junior or 8-12 Middle Schools or in the smaller organization of the 5-12 Primary Schools. In a Halesowen 9-13 Middle School, the position of the ten-year old pupil is very different indeed from either of the former cases. In both 7-11 and 9-13 units and in one or two of the largest 8-12 schools, the children are almost all treated as mature scholars, probably on surname-terms for boys, possibly streamed, or at least carefully 'set' for a curriculum mainly subject-based. In the smaller 5-12 schools, however, there is usually a closer 'family' atmosphere with a great deal of emphasis upon mixed-ability teaching - often from the necessity of merging one small year with another, or breaking down one large year between two other age-groups. Here there will be experience of team teaching and integrated, inter-disciplinary studies. Specialist teachers will be more readily available in the large 'older' schools, though the small Primary school will have made some moves towards a 'co-ordinator's' post or two. In a Stourbridge Junior school the children will probably study History from seven to eleven, at least as sporadic patch periods. In a Dudley or Halesowen Middle school there will certainly be more attention to integrated projects, to Environmental Studies, Topics or lines of development on such themes as Transport, Houses or Costume 'through the ages'. M any of the Middle school developments will have involved a considerable degree of curriculum development, over a period of several years, including staff co-ordination, in-service training and the production of purpose-made learning and teaching materials.

Some of the prevalent inter-disciplinary work may be superficial, as the recent Primary School survey carried out by the Department of Education and Science appears to

suggest (6); much is also thoughtful and well-structured. Most of these Primary and Middle schools will react, in the last year of their responsibility, whether this be ten, eleven or twelve, to a sense of impending Secondary school demands for 'real' History. This will almost certainly result in the more didactic teaching of an historical period for the final year, probably the Middle Ages, the Tudor period or the Nineteenth Century. Many children, however, will leave their Primary school, for better or worse, never having been aware of having studied a time-tabled lesson named 'History'. They may, of course, nevertheless have experienced a wealth of historical activities.

At twelve, the pupil may find himself at the 'top' of his Middle School, or as a new boy in the youngest forms of a Secondary school. We have already suggested what his historical experiences may be in the former case. In the latter situation, though at the identical age as his fellow, he will have already become a junior member of a relatively highly qualified History department with specialist History teachers and specially equipped History rooms. As local Inspectors' reports have regularly recorded, the standards and objectives of all these diverse types of organization and teaching will vary from school to school and from type to type. Indeed, in Dudley the type-variation is probably even more consistent than the individual school-to-school differences; our own project results in the last analysis may confirm this suggestion.

Three other factors have drastically influenced the opportunities available in Dudley schools. Firstly, twelve years of repeated reorganization have created an outright demand for constant curricular revision, re-planning and development. This has been facilitated by the early (1967) institution of local catchment-area Curriculum Development Groups of Schools, which meet regularly from term to term to plan and organize change in schools, each with a local

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6. Primary Education in England: A Survey by H.M. Inspectors of Schools. Department of Education and Science, September 1978 (H.M.S.O.) pp. 72-73

authority Adviser as its liaison officer, instigator and professional catalyst (7).

For the same period of time the Authority has benefited from the steady development of an outstandingly active Teachers' Centre, a highly organized programme of in-service training (8) and, above all, the organization and growth, at the Teachers' Centre of a sophisticated, well stocked and constantly expanding 'bank' of resource materials for teaching and learning. These now number several thousand printed items, as well as other multi-media aids (9). The paper materials are entirely teacher- and adviser-produced. In its most elaborate form, the Resources Bank has, for the past four years, extended its scope into computer-assisted archive teaching. This experiment has taken place under the auspices, first of the Council of Educational Technology's National Development Project (1973-1978), the Schools Council's Project on Computer Assisted Learning (1973-1980 and continuing) and of the Borough's own Computer Division. With this formidable body of sponsors, the Dudley 1851 Census and many other local archives have been 'banked' on computer tape with teacher-devised programmes for the retrieval and restructuring of documentary sources. This has led to some lively historical studies of local social and economic and family history, more particularly, at first for Primary and

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7. Inspectors' Report to Education Committee, 1979. op. cit. pp. 36-42. See also: West J: A Pattern of Continuing Training. Dudley Educational Journal, Vol. 1 Spring 1972, pp. 35-46.
8. Annual Programmes of Professional Studies for Teachers. Dudley Metropolitan Borough, s.a. 1974-1980, continuing.
9. West John: The Development of a Local Resources Centre. Teaching History Vol. II No: 7, May 1972 (The Historical Association) pp. 228-235

and Middle School pupils aged ten to twelve (10).

Thirdly, the Borough has established an active advisory service of ten local inspectors. Of these, the present Chief Inspector is by qualification and experience a History teacher and ex-College of Education tutor. The Warden of the Teachers' Centre, an ex-Headmaster, is also a History enthusiast, thoroughly well-versed in the local history of the area. With this help a flourishing Teachers' Archive Study Group exists for teachers of all age-ranges (11) and the annual programme of in-service courses has usually included at least one major History Course for Primary, Middle and Secondary schools' teachers, usually on a combined basis. Similarly, Dudley took a leading part in the pilot phase of the Schools Council History (13-16) Project, the Chief Inspector being a member of the Project's consultative committee with three of the Borough's schools enlisting as

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10. From the Brook Primary School: (Pilot School OP): The Nanaimo Pioneers (1854-1975) The study of a group of Brierley Hill colliers and their families who emigrated via the Hudson's Bay Company to Vancouver, British Columbia and are in contact with the school today. A collection of 250 information and worksheets compiled in nine working booklets for class use. Dudley Teachers' Centre Resources Bank Items Nos: 2400 to 2650 (1975).

    From Belle Vue Middle School: The Beddard Family (1851-1977): The computerized study of a nailer's family found in the 1851 Census of Wordsley and traced through various local archives to the present day. A set of three main books for schools: (i) Evidence, (i) Children's Workbook and (iii) Optional Choices. Dudley Teachers' Centre Resources Bank Item No. 5325 ff. (1977).

11. e.g. Teaching History Vol.II, No: 6 November 1971 (The Historical Association) p.172.

    See also: Wood Robert G.E: Archive Units for Teaching. Teaching History Vol.II No: 7 (Historical Association) May 1972. pp. 220-221. viz: Samuel Cook and Working Class History in Nineteenth Century Dudley (p. 220); The Mitchell Report. 1841. (on local working conditions and the state of education) (p. 221) and Report on the Employment of Children (in Dudley): Horne's Report 1841 (p. 221). All attributed to 'Dudley Education Committee' 1972.

'pilot' members. With the help of the Centre's Resources Bank large quantities of the Project's essential materials were locally produced, some being eventually published with acknowledgement of the Dudley teachers' authorship (12). One of Dudley's Primary schools was an associate member of the Schools Council's Social Studies (8-13) Project, its Headmaster leading an active local discussion group and working party with regular, welcome visits from the Project's Director and staff. As we have seen, three Secondary Schools and an entire Curriculum Group had become deeply involved in the national projects on computer-assisted learning, Dudley being one of the few authorities which had begun and sustained work on these projects in the field of local history.

The Authority and its schools are also closely concerned with the latest developments of the nascent Black Country Museum, Dudley officers and teachers assisting with its advisory Committee for education and providing teachers as leaders for in-service courses on the Museum site. Other teachers organize a flourishing Archives Study Group under the distinguished Presidency of Dr. John Fines. The Borough enjoys a wide community of friends and co-workers in History from all parts of England and abroad; HMI, College and University tutors, teachers, research workers and students, from all over the United Kingdom and overseas, all come to Dudley.

These are the influences which have lately culminated in a considerable amount of interest throughout Dudley schools in all the many facets of History teaching, all the many

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12. The American West, 1840-1895: Enquiry in Depth. Schools Council History 13-16 Project, with acknowledgement to: B. Bainbridge, The Summerfield School, Kingswinford, Dudley and A. Dunphy, The Ellowes Hall School, Lower Gornal, Dudley et al. Holmes MagDougall, 1977.

Also, History Around Us: Some Guidelines for Teachers. Schools Council History 13-16 Project with acknowledgement in Industrial Archaeology (p. 6) to A. Dunphy, The Ellowes Hall School, Dudley and with 'a study of the visible remains in the Dudley area' (p. 131) Holmes MacDougall, 1976.

aspects of the past. It has been an exciting decade, a productive period throughout which, slowly and steadily, rather than suddenly, all these many factors and agents of change have coalesced. It is now evident to Dudley teachers that, small as the Authority is and under-resourced in some financial aspects of its work, nevertheless it is possible to make progress in many curricular fields. The climate for curricular change and development is the most favourable of all the seasonal changes which the Borough continues to experience in its schools.

There is more to Dudley's heritage, however, aspects more fundamental and deep-rooted, compared with which most of the schools' superstructure is transient and superficial. I refer now to the tradition of the locality and its region; the Black Country. Here again, we find a wealth of variety and strength. Situated on the extreme western fringe of the West Midland industrial conurbation (see Map on page-x-) Dudley and its most recent associate townships have a well-marked tradition of their own, as well as that which they share with the region. Here are three ancient boroughs entire and, as yet only notionally bonded in any but administrative terms. Older than the boroughs are the 'villages'; score upon score of fossilized industrial communities, dozens of pastoral oases, farms and tinker settlements, miles of canals, acres of pit-batches, wasteland and urban reclamation.

In the extreme west of the borough are the newest communities, housing estates, both municipal and speculative, some of them reclaiming ancient industrial wasteland. At the fringes, in the villages of Staffordshire and Worcestershire, to south and southwest, the new housing developments merge into countryside which marches into Herefordshire and Wales. Eastward and northerly, the small townships, hamlets, urban districts, parishes and homesteads huddle more closely - Cradley, the Gornals, Pensnett, the Lye, Coseley, Quarry Bank, Brierley Hill, Hob Green, Hurst Hill, Sedgley and countless others. Older inhabitants remind us, with civic pride, that the present Brierley Hill 'suburb' contains what were once three self-governing districts, or 'local authorities'.

On that smaller scale, within Dudley we find Coseley; within Coseley, local pride still burns for Roseville. Still, to the older generation, whether large or small, each place-name marks 'the village', each with its nucleus, its chapel, its shopping centre and its school. These older places are totally different from the newer housing estates which link them; older than the suburbs which encroach on them.

There are, on the larger scale, other local peculiarities. For example, though by now a moderately large 'metropolis', none of the three component townships has any intensive urban 'inner-ring' development, nor even much survival of any 'twilight zones'. Extensive slum clearance in both Halesowen and Dudley has demolished the oldest historical town housing, replacing it with shopping precincts, bus parks and roads. Stourbridge has suburbs - though these too tend to take the form rather of older 'villages' such as Wollescote and Beauty Bank - but Dudley and Halesowen have little that is recognizably solid middle-class 1930's housing, except on the heights of Lapal and Cotwall End. 'Residential' areas of this sort are now vastly outnumbered, in each township, by the newer, 'smarter' houses of the commuter countryside. There, society is mobile, transient and youthful business management and peripatetic 'representatives'; products of the affluent society of the industrial Midlands.

In the villages on the other hand the extended family survives; of the housing estates' families, Gran probably remained behind in Birmingham when the younger generation moved with promotion. In the older, less mobile communities of Dudley, Cradley and Brierley Hill, the fourth generation of children attends the same local schools as their great-grandparents; the school is often dated c.1880. Teachers who were pupils in those same schools are now Headteachers, near where they first began their probationary service after training at Dudley, Saltley, Wolverhampton or Walsall. One Adviser is a Stourbridge Old Boy and ex-teacher in the Borough's remedial service; another was a Headmaster in Audnam-in-Wordsley in Stourbridge, the vicar of a local church and the successful pupil of a Gornal school. The foundations of local history and curricular continuity are thus secured.

On the other hand, the more intrusive forces of administrative reorganization and educational change, as we have seen, have made their own inroads. Unfamiliar, until 1967, with the very idea of an educational Advisory service, the Borough's schools now, ostensibly, appear to welcome Curriculum Groups, Teachers' Centre, In-service training, Curriculum Bulletins, experimental projects - even periodical Inspection and evaluation of the individual school's objectives (13). A few, with the new demands of INSET, are even preparing for self-evaluation. A staunch sense of responsibility for 'the basics' has been, in Dudley, by no means totally exclusive of more 'progressive' ideas, provided that these can be shown to have credibility and, more important, prove themselves productive of recognizable results, advantageous to the pupil. The Authority's schools provide a rich seedbed for curriculum development.

Yet, in such a situation, where an Authority's schools have been faced for several years with a situation which presents at once a welter of diversity, a series of new opportunities and a strength of existing tradition, it is not surprising that a prevalent state of uncertainty has also evolved. We are concerned here only with whatever educational uncertainty has accrued to the teachers' view of children's studies of the past. It has already been suggested that 'History', as a time-tabled subject in Primary and Middle schools, has for some time past been tacitly replaced, in Dudley as elsewhere, by 'Projects' and 'Environmental Studies'. The results of this transition are best illustrated by extracts from a series of Inspection reports which accept that the most usually recognizable definition of the curricular area which will now includes any vestiges of History is the generally accepted label of 'Environmental Studies'.

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13. These objectives are usually selected, in the case of Primary School Inspections, by the Headteacher, with any required modifications, from: The Aims of Primary Education: A Study of Teachers' Opinions by Patricia Ashton, Pat Kneen, Frances Davies and B.J. Holley. Schools Council Research Studies. Macmillan Education 1975. (Dudley L.E.A. was thoroughly involved, by a teachers' working party, in the original development of this taxonomy during 1969-1973)

The nature and effect of this redefinition can be illustrated as follows:-

School 1. Non-Project Primary School, ages 5-11

4. Environmental Studies

'It is difficult to know what one should refer to in this field, as there appears to be no single term, apart from 'Topic' in use amongst teachers throughout the school. This is because there is no syllabus for any work of this kind, no scheme of work and, in some cases, no clear view in the individual teacher's mind of what he or she intends to do in the long term.

We are referring then to what are now loosely named 'the information subjects' in the Primary School, which usually integrate the residual fragments of such History and Geography and, possibly, Science, as is nowadays deemed to be especially suitable to children of Primary School age .... At (this school) there appears to be no overall system whatever, even within each individual year. We understand that notes are passed on from year to year, notifying the next teacher of what has been covered in the previous year, but this does not seem to be, in effect, an adequate protection against unnecessary duplication. Certainly, many of the topics are individually well prepared and in some cases form a logical progression in the teacher's mind; in several other cases however, each week's work is 'ad hoc' and progression is entirely haphazard.....Generally speaking, there is an absence of much general knowledge or of any geographical or historical groundwork throughout the school. This lack is the more evident in that in most classes only one hour's specific work a week is timetabled for Topics. In 1D and 2T there appears to be no mention of 'Topic' in the classes' weekly timetable. With the exception of 4G there is little or any evidence of work which might legitimately be referred to as 'Environmental Studies'; except in Classes 2WT and 2M there was nothing which could be seen as systematic 'History'. We do not feel that 'Colours of Autumn' is an adequate centre of

interest for integrated topic work, even when, inevitably, it extends itself to Bonfire Night or nature study.....Progressing from class to class one discovers a wide - or indiscriminate? - range of mini-studies. These extend, in this term alone, from: Holidays, Pirates, Robin Hood and Witches, to the Victorian seaside, the Holy Land, Colours of Autumn and Robin Hood, to Autumn yet again, from the Seasons and Science of the Senses, to the colours of Autumn again, the Science of Plants and the Seasons and to a skills-based study of maps and plans. The teachers' dependence on television is seen in the void left by the ITV series on 'Stop, Look and Listen'.

As to progression, during this year, whether or not this depends on television services, the most logical series are, to say the least, intricate. 'A hot country' (The Holy Land) may be followed by 'a cold country' (Eskimos) with a third term's work on 'How life began from the sea', (a torturous return to the first term's work on the Victorian seaside). Robin Hood, on the other hand, will be followed by the television series on Robinson Crusoe. Autumn is featured with monotonous regularity in several classes. At least some of the second year will be following Robin Hood and the Senses after last year's work on Caterpillars and South America. They will follow that with work on transport. One cannot avoid the conclusion that the personal choices and enthusiasms of individual teachers have been allowed to override the children's real needs.' (14)

School 2. Non-Project Middle School, ages 8-12

6 and 7. The Humanities: History and Geography

'It is unusual lately to discover a Middle School syllabus which outlines, as the Headmaster's schemes intend, the basic teaching of these subjects as separate disciplines.....At present, within the very broad and traditional limits of the scheme, each teacher chooses a series of loosely associated topics which interest him/her most or which are most likely to appeal to the children. This results in some episodes of

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14. L.E.A. Inspection Report No: 22 October 1979. pp. 44-45

interesting work, e.g. on the trial and execution of Charles I, a television series on Water, a study of turnpikes and coaching, some fairly advanced work on Volcanoes with very young children, a stimulating programme of visits and outings and, at the top of the school, an excellent investigation into the conditions of labouring children in the nineteenth century, based on original source material. Within somewhat irrelevant boundaries therefore, each teacher 'does his own thing', a very prevalent method of work which always tends to result, if not in superficial study, then in a sporadic series of disconnected ideas. It cannot be assumed, in any case, that the aims and outlines of the schemes a r e reality in the individual classroom.....At present, a minimal standard of evaluation of children's special and general knowledge at 11-12 years old reveals a woeful inadequacy and, indeed, some confusion.....' (15)

School 3. Project Primary School OJ age-range 5-12

'The overall concept of 'Environmental Studies' is probably stronger than the development of more specialized History and Geography but, in spite of the fact that a great deal of interesting work is developed by individual teachers, there is a general lack of direction which requires immediate attention and some agreement on well-defined series of aims and objectives.....At present there is, if anything, an embarrassment of choice. It is possible to stand in several of the classrooms and become bewildered by the sheer number of divergent interests. For example, in one classroom one is confronted by attractive display work illustrating eight different centres of interest: creative writing on the weather, imaginative work on monsters, an underwater scene, artistic work on heraldry, flower paintings and embroidery, the major project on Food and Drink, an interest table on rocks and minerals, and some excellent assignments on environmental mathematics. One is fully aware of the values of a rich and varied range of stimuli but this must be kept within manageable proportions.' (16)

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15. L.E.A. Inspection Report No: 3 February 1975. pp. 48-49
16. L.E.A. Inspection Report No: 12 March 1977. pp. 52-53

School 4. Project Primary School VV age-range 5-12

'At present there is a disjointed sequence of interesting topics and themes throughout the school. Some topics such as 'Homes' and 'Travel' are repeatedly developed at different levels and stages: there appears to be no continuity whatever. The integration of subjects, particularly with English language, sometimes with Science but rarely with History, is sporadically effective, more so in some classes then in others.....The new programme, based upon the analysis of the original scheme, must accept the fact that individual enthusiasms and subject interest must be contained within a common scheme which works in one direction, not in all directions at once. Each class teacher must be prepared to accept a certain amount of direction in return for his enthusiasm.' (17)

School 5. Non-Project Primary School age-range 5-12

'It must be emphasised that much of what was being learned was lively, colourful and well-prepared by each teacher. The chosen themes and topics were evidently of interest to the children and the standard of recording work was adequate. Teachers with an artistic bent obviously reveal this advantage in the attractive way in which their classroom is arranged and 'dressed'. Most teachers prepare their work carefully and talk convincingly about their future plans. These remarks usually apply more to the Topic than to any more specialized subject disciplines. These appear to be disconnected, lacking in progression and continuity. The main criticism of this type of programme from Secondary school subject specialists, concerned parents or interested managers, may well be that what the work gains in enthusiasm, colour and, in a few cases only, genuine 'discovery', is lost by a generally superficial understanding of the true concepts and skills involved in each subject. Certainly one feels that these criticisms apply more to the total diet offered the child over a period of seven years than to the individual menus prepared for each class.

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17. L.E.A. Inspection Report No: 7 November 1975. pp. 48-49

In some cases, particularly in the Infant department and in one or two Junior classes, more particularly in J3, the work hangs well together and tempers enthusiasm with specialism... ...It is evident that integrated work is in some sense easier and more convincing with the younger children. Otherwise, one deplores the wasted efforts spent on childish concepts of, for example, 'Georgian England' and notes with alarm that in some cases, for example in Class J2, 'History' is arbitrarily dropped from the course. Nor does one need to labour the evident lack of purposeful progression in the children's work year by year.....Can it really be justified in any sense of planning the children's course of Primary School study that a study of 'buildings' in one form or another occurs in I2, I3 and J3, as does the theme 'Water' in different guises in five of the school's eight classes? At the same time the growth of plants appears in three classes and a Holidays topic in two.

There is apparently no satisfactory scheme of work available in the school: we must insist that the entire field of this curriculum be reviewed and amended before the children return to school in September 1978.' (18)

School 6. Non-Project Middle School age-range 8-12

'There is no Environmental Studies syllabus for this school; this results in each teacher choosing his or her own topic in isolation from each other. The topics which will be studied this school year are:-

	Autumn 1976	Spring 1977	Summer 1977
Class 1:	Animals	Volcanoes/ Finding Out (TV)	The Middle Ages
Class 2:	Ourselves	Our School	Our Town
Class 3:	Exploration		Space
Class 4:	Our School		
Class 5:	General World Geography	France/Colour	Travel/ The Sea
Class 6:	Victorian England	Europe	Natural/Local History

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18. L.E.A. Inspection Report No: 19 May 1978. pp. 39-40

	Autumn 1976	Spring 1977	Summer 1977
Class 7:	Water	England	Trees
Class 8:	Earth	Romans	A Scientific Theme
Class 9:	Australia/Early 20th Century	The Twentieth Century	The Jubilee
Class 10:	Industry/Flight	Local Government	Maps and Mapmaking

Such an individual arrangement, if it continued unchanged for the next four years, could result in a child studying 'Our School' in Class 4, 'Local History' in Class 6 and 'Local Government' in Class 10, broken only in Class 8 by 'Earth' and 'Romans' or in Class 9 by 'Australia' or 'The Jubilee'. Such an untidy and haphazard course cannot be permitted to continue' (19)

In June 1976 a questionnaire was sent to each of the 68 Primary and Middle Schools which had already submitted children's work for a feasibility study, described in a working paper. (20). The forms were sent to the Head teacher of each school and in only a few cases did it appear to have been distributed to class teachers for answering. We received, in response, statements of Headteachers' intended policies for each school, though in some cases one or two Heads found it necessary to qualify their answers with: 'This depends upon the individual class teacher.' The questionnaire was intended as a guide only, it offered too little definition of its terms and too little guidance on quantities such as, e.g. 'a considerable amount' of story telling. Generally speaking, however, the questionnaire was accepted by the majority of Heads who found the general terms of the questions familiar and acceptable. This was, after all, a group of Heads who had been continually involved, some for as long as ten years,

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19. L.E.A. Inspection Report No: 13 March 1977. p.47

20. L.E.A. Working Paper: Children's Awareness of the Past, The Questionnaire on the Curriculum. July 1976. These,& other unpublished papers about this project are lodged in the Dudley Teachers' Centre, Himley Hall, Dudley, pending any future publication.

in an ongoing process of LEA curriculum conferences and in-service training together. Most of the terms used in the questionnaire, such as 'topics', 'integrated studies', 'creative writing', 'traditional History' and 'evidence' had themselves been themes and topics for specific courses, conferences and curriculum bulletins. We could therefore assume that each school's responses would bear recognizably similar characteristics.

The results of the schools' responses, when tabulated, showed that story-telling appeared to be most prevalent in 5-11/12 Primary Schools; significantly less was mentioned by 7-11 Junior schools or either type of Middle School. Also, story-telling was generally reduced after 10 years of age, especially in the 7-11 Junior schools, which had given up stories altogether by that age. A chronological History syllabus was found in only one-third of the Primary schools and in only 26% of Middle schools. Patch periods, however, were popular; they appeared in 73% of all schools, more particularly in the Primary range. A sustained series of successive patches was unusual; only 41% of all schools attempted such a series. Just over half (56%) of the schools agreed that they endeavoured to cover some 'traditional' History; the balance here was more in favour of the Primary schools (64%) than the Middle schools (44%). This was a general trend of the whole survey; the newer Middle schools appeared to have moved further towards an integrated syllabus; the older Primary schools, most particularly the 7-11 Juniors, survived as the bastions of more traditional practice.

Local History was popular; 41% of the schools used it regularly. Studies of the recent past were also commonplace in about one-third of the schools, fewer (20%) had developed this interest to cover family history at all systematically, but a larger number (41%) carried out fairly regular 'Family' topics with a more generalized 'Social Studies' approach. 39% of the schools expected their work on the past to refer fairly regularly to first-hand sources of evidence and a very large number (71%) regularly incorporated visits to historic sites into their syllabus. (These can easily involve visits as far afield as York or Bayeux.) Opportunities to move out

into the immediate local and regional environment appeared to be more readily available to Primary Schools (85%) than to the Middle schools (51%). Yet the later written exercises of the feasibility study revealed little positive outcome from these more specialized efforts. Spontaneous references to local history in children's unguided test essays, for example, were as low as 2%. The set of family history references was identically low (2%). (21)

A large majority (82%) of all schools referred to a 'topic approach' as their main curricular vehicle for studies of the past. This method was more prevalent in Primary schools (91%) than in the Middle schools (68%). This figure was matched by an equal insistence on 'discovery methods' (82%) and a general popularity of 'patch periods' in the later years of Primary Education (73%).

As to methodology, the majority (82%) supported 'discovery' but many also expected to include the occasional use of 'formal essays' and 'direct teaching' (71%). Even so, a chronological syllabus was not highly favoured; only 30% accepted its general use. In all these responses, made with particular reference to the 10-11 year old age group, Middle schools usually offered children a more 'Primary', less specialized bill of fare than did the Junior schools where the same year group was at the very top of the school. Those children were offered more chronology, more essays, more didactic teaching, more History. It was evident that the 8-12 Middle schools effected the finest balance of these and other methods.

The final section of the questionnaire asked the Head teachers for their views on the possible future of Primary and Middle school studies of the past. 83% asserted that they would hope to see some clarification of the aims and methods of History teaching for children in their schools. This large majority certainly reflects the general uncertainty of aims

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21. Ibid: Table XX. References to Local History. p. 36
and Table XXII. References to Family History. p. 41

which had become so evident on inspection. A similar proportion (86%) of the Heads felt that certain skills, attitudes and concepts about the past would require special attention in the children's curriculum. Nevertheless, many (76%) still felt that they would also like to see historical content integrated with other subjects' matter rather than isolated for special attention in Primary and Middle schools. Here lies the dilemma of the Primary school and its relatively unspecialized class-teachers. Special needs are sensed or seen in certain subject areas - so that the same is true of Science, Mathematics, English or French as in History - yet the whole ethos of Primary education has appeared, for twenty years to imply an essential integration and non-specialization at all costs. The fundamental inconsistency of these attitudes and the ambivalence of the various schools' intentions cannot fail to result in unreliable results.

The objectives of Primary school history teaching had always been my own preoccupation. Research in this area, one was aware, had not been encouraging; its background and findings are summarized in Chapter Two. Yet it appeared from the research survey that there had as yet been little if any work carried out which had been based on adequately large and representative populations, nor for any substantial period of time as a longitudinal study. This discouraging theoretical background has in fact influenced many Primary school teachers towards inactivity and inertia, because 'we know that research has proved that younger children are not capable of any systematic historical study'. Nevertheless one was personally convinced by association with such influential exponents as Roy Wake HMI (22), John Slater HMI (23), and John Fines (24)

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22. Wake Roy: Where Have We Got To? Teaching History Vol.II No: 6 November 1971 (Historical Association) pp. 169-171

23. Slater John: Why History? Trends in Education. Spring Issue 1978. pp. 3-8

24. Fines J: e.g. Introduction to History in Blond's Teachers' Handbooks. Blond Educational Ltd. (1969) pp. v-viii

as well as Infant teachers of the calibre of Joan Blyth (25) and Margaret West (26), of the essential nature of time and evidence and the necessity of raising the expectations of teachers of children aged 6-11 with regard to the study of history. Having already written for teachers on this subject and produced work that was essentially skills-based and documentary-centred (27) it appeared that, in Dudley, time, opportunity and climate were all propitious for a renewed and systematic advance upon a more adequately defined front. This was the situation in which the Child's Awareness of the Past Project was devised and implemented, for a six-year period, from 1974-1980.

In the Spring and Summer Terms of 1974, the author and his wife, who is the Inspector of Infant Schools in Wolverhampton, organized a feasibility study in Dudley and Wolverhampton, as a preparatory phase for later development. Three groups of six pupils, aged 6, 10 and 17, were organized in weekly sessions to examine and discuss a carefully selected group of historical objects. The purpose of this exercise was to confirm, on a small scale, the criteria which might be

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25. Blyth Joan E: Young Children and the Past Teaching History, June 1978 No: 21 and: Teaching Young Children about the Past in Education 3-13. Vol. 7. No: 2 Winter 1979.
Also: Geschichte in der englischen Grundschule: Probleme und Moglichkeiten. (trs. Iris Voit) Klinkhardt (1980) pp. 165-173.
See also: Le Fevre M: Introducing History to Young Children. Teaching History, Vol. I, No: 2, November 1979, pp.
and: Bowen Mary: Another Approach to History for Younger Children Teaching History Vol. II No: 7 (Historical Association) May 1972, pp. 253-255.

26. West Margaret F: History and the Younger Child. Teaching History Vol. I, No: 4 November 1970, pp. 258-264

27. West John: Village Records, Macmillan 1962 (o.p.); History Here and Now, Schoolmaster Publishing Co. 1966; Archives for Schools, Schoolmaster Publishing Co. 1968; The Middle Ages in Blond's Teachers' Handbooks (1969) pp. 35-50; A Captain in the Navy of Queen Anne (Then and There series) Longman 1970; The Medieval Forest (Then and There series) Longman 1978; Joan of Arc (The Way it Was series) Chambers 1977.

adopted in any future investigation of what we had begun to call 'Children's Awareness of the Past'. From the first, the feasibility study set a high premium on carefully prepared and well-monitored peer-grouped discussion. The project was seen, from the start, as primarily a linguistic exercise, the children's language being essentially associated with their skills of observation and deduction. Those skills were to be demonstrated by the interpretation of clues and evidence provided by objects from the past, both as original artefacts and replicas.

The objects were: a set of seven prehistoric flint tools; a charter of the Black Prince; three World War I medals; a modern scale model of an eighteenth century warship; a large photograph of Queen Victoria; an early 19th Century needlework sampler and a 'Columbia' phonograph dated.1901. These objects had been selected, each to illustrate certain key concepts: for example, 'replica', 'primitive skill', 'absolute antiquity', 'family history', 'royalty', 'leisure', 'invention' and 'authenticity'. The primary purpose of each item was to stand as an example of evidence from the past. A required vocabulary was predicted and checked in each case. Some objects were chosen to display clear dating evidence or written titles; others were virtually illegible. All the discussions, repeated thrice in each week, once with each group in their own school, were tape-recorded as well as transcribed at the time. The teacher acted as a neutral, non-contributing chairman, merely encouraging discussion to develop as the pupils wished. The average length of all discussion, from Infants to Sixth Form, was 30 minutes. It was possible to observe which, if any, of these items required a high level of previous knowledge about them to maintain and support discussion.

The nature of the study, despite careful tape-recording and transcription was not fully capable of objective analysis. (But see O.R. Holsti on 'Content Analysis for the Social Sciences and Humanities': Reading, Mass. Addison-Wiley 1969, to justify the form of frequency counting of 'specific characteristics' in 'context units'). It was indeed

possible to verify the presence, or absence of certain criteria for each discussion and thus to count all observed instances of words and phrases which appeared to conform with those criteria. Similarly, a word-count was also possible, from which a division could be made between the proportion of strong and weak words used. Two specimen histograms (page 25-6) are intended only to illustrate the general trend of the discussions and the nature of the criteria adopted and checked. These are not intended to be statistically significant.

The seven criteria checked, counted and measured by the graphs, of which there were, of course, seven (plus the overall 'All Items' graph) were: Vocabulary; Identification (for which there was always the possibility of an outright 100% right answer); evidence of Knowledge; Observation; Deduction; Dating evidence and, finally Response. The last allowed for instances of empathy in the discussion or as expressed by sufficient interest to follow up the discussion by bringing in books or associated items the next week, or voluntarily offering extra personal work as a sign of special interest in the object. (This was seen to be almost impossible for the Sixth formers, preoccupied with examinations, occasionally taken up by Infants whose integrated day provided more opportunity to follow up passing enthusiasms, but was most consistently demonstrated, both within discussion and after, by the Middle schools' pupils.) The criteria were checked by simple counting of those phrases in the transcripts which seemed adequately to match our requirements.

The large number of words used by all the children was impressive. The average number of words used by all the groups, in a total of twenty-one discussions on seven objects, was 58 words; this average includes the Infant group's contributions. The Middle school group, for example, used 127 words to describe the flint tools; for the same objects the Sixth formers used 172. In order to conform with the scale of the other responses for each criterion, it was necessary to divide the column for the simple word count by four. The vocabulary columns are then divided again, so that a distinction is made in each case between 'strong' words used -

the solid graph - and the additional 'topping' of 'weak' words which are unshaded. Weak words were taken to include slang or repetitive meaningless words - the Sixth formers tended to use 'technological' regularly, or such exotic descriptions as 'meticulous', 'anachronistic' or, in the case of the flint tools, 'lensoid'; these were usually meaningless. The infants, on the other hand, tended to use straightforward words such as 'black', 'round', 'sharp', 'cylinder', 'stitched' etc. Weak words from all groups included 'funny', 'stuff', 'pretty', 'spooky', 'thing' etc. and from the Sixth formers: 'vile', 'fantastic', 'mellifluous' (for the hand-axes!) and 'basic' (for anything). The significant result of this assessment of the different types of words used by each group was that, although the overall average was 65% of 'strong' words, the Infants, though using fewer words in all (288, an average of 40 per object) compared with the Middle schools' pupils (457 or average of 65 words) or Sixth formers (483, 69 average), used in fact 80% effective words, compared with 52% for the Middle school and 69% for the Sixth form.

The conclusion drawn from the word-count was therefore that children, even young Primary school children, would not lack an adequate vocabulary to use in discussion of difficult objects from the past. Rather, there was a tendency to use too many words, some imprecisely.

The remaining sections of each graph conformed generally to a similar set of patterns. The illustration of the discussion of Object No. 5, the model ship, for example, was quite typical:-

(Key : The groups of three shaded columns in each sub-set are in order, Infant, Middle and Sixth form responses
Voc = Vocabulary (scaled down to match other sets)
Ide = Outright identification; Kno= Knowledge demonstrated;
Obs = Observation; Ded = Deduction; Dat = Dating evidence; Res = empathetic response).

5 MODEL SHIP

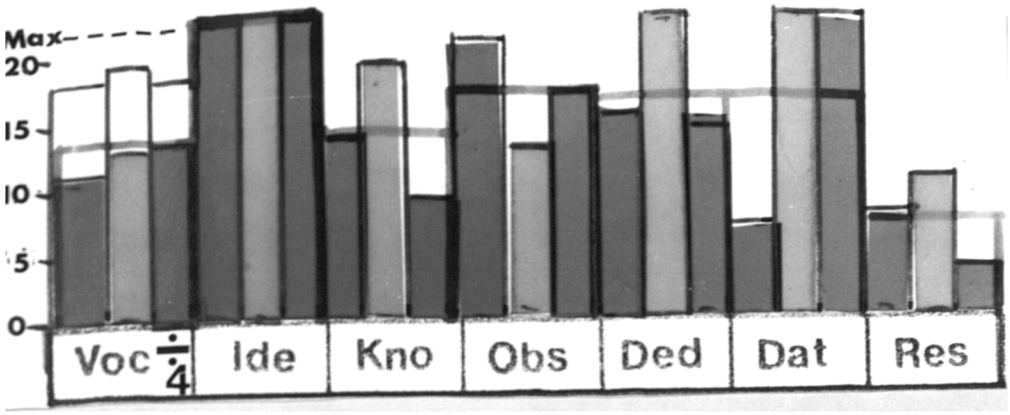


Fig. 4 : Graph showing childrens' responses in discuss:

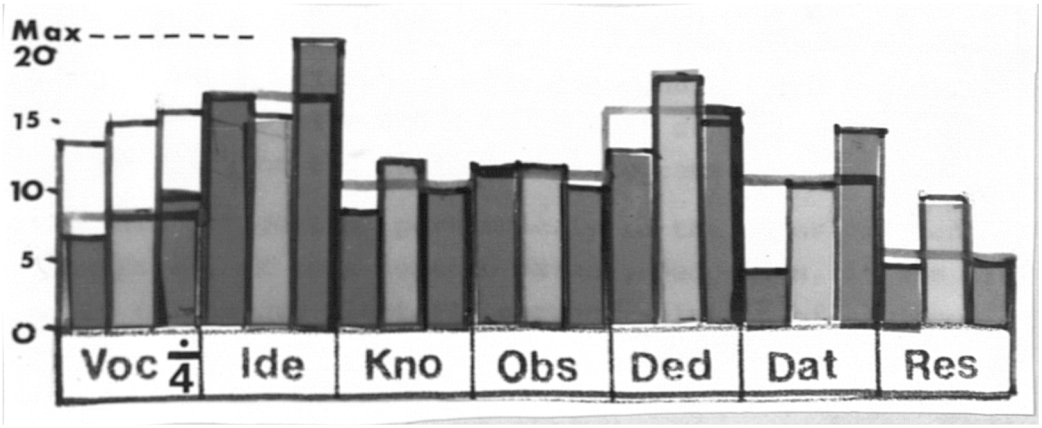
The confirmation of outright identification in Fig.4 implies the realisation, by all three age-groups, that the model was a modern replica, to scale, of an 'old-fashioned' sailing warship. As the Infants put it: 'a model of an English Navy battleship.....more than a hundred years old.....'

The extent of the children's Knowledge was usually less than their powers of Observation and Deduction. Of the latter skills, it was not unusual for the six-year-olds to prove themselves the most observant, nor for the ten-year-olds to persist most doggedly with their deductions. Dating evidence, for all groups, tended to be uncertain and sporadic. Yet the six-year-olds were capable of rearranging the seven stone-age tools into a correct chronological order. One infant realised that his grandfather was exactly as old as the phonograph and another six-year old announced that 'My Nan was one when Queen Victoria died'. The older pupils' dating of the ship and charter was precise, the result of deduction and the application of existing knowledge by the group. In most cases, wherever a direct family association was possible,

measurement in generations was reliable. To the Infants, a modern tape-recorder was '...the baby, as old as your sister.. ...'; the 1930's gramophone was 'the mother' and a phonograph was 'the grandfather'. The ready assumption by the younger pupils that the charter should be associated with an age of castles, knights and Robin Hood was a useful example of 'time-sense' as opposed to knowledge of dates. Otherwise, endeavours to associate numbers with a distance in time, except for the oldest pupils, were extremely unreliable.

Fig. 5 : Graph showing childrens' responses in discussions

8 SUMMARY : ALL ITEMS



The extent of empathetic response was remarkable. The model ship aroused almost poetic six-year old reactions to the question: 'How does it make you feel?': 'Like a soldier and sailor bold...makes me feel like I'm on it... I'd like to go downstairs and see what's down there...I'd like to be the Captain...' The ten-year-olds especially were capable of strong emotions, which often seemed to take charge of their discussion in a sensitive and sympathetic commentary, from child to child. Thus, on the flint hand-axe: 'It fits nicely into your hand for throwing or hitting...they're violent weapons, for killing animals...destructive...they were

talented people...lonesome...fierce. They were warlike people, warriors defending and attacking...needing food. They were needing things, they might be fighting for land. Fearsome fighting...killing animals...scared.' Their moving response to the soldier's modest medals and associated ephemera from Flanders was worthy of attention: "'How I miss you'...that's a lovely one. This one's probably a soldier writing to his son, it says 'Much love from Daddy...' That one's very upsetting. Wishing there wasn't a war...Wishing he would come back. I feel that I don't ever want there to be a war. It puts you against war. It's all people getting shot...sometimes they lose their father. If they find their husbands die, they may die of terrible unhappiness. War is shooting and destruction and a lot of people getting killed and a lady sending off a letter and never getting a reply, or she gets a postcard saying that he's dead. Or she reads it in the newspaper...the shock. Memories...old friends... they must have helped each other." The graphs repeatedly show the Responses of the Middle group to be in advance of both older and younger groups.

During a further period of trial discussions in five Primary and Middle schools, ten-year old-classes only were used. One of these was the Middle school already used, four were new Primary schools. The purpose of this phase was to set up the opportunity for discussions of the same objects with no supervision other than the class teacher, in the normal environment of the classroom or the adjacent spaces, and to carry out trials of score-sheets and guides which would enable peer-group discussion to continue, and be monitored by each teacher without total continuous supervision. A further series of 97 discussions was carried out in the five schools on these lines. The group leaders' score-books, vetted and aided by the teachers were returned in full; the average duration of these completely unsupervised discussion groups was 29 minutes. The findings from the records were similar to those of the previously supervised groups; they were fully recorded in a working paper.

The feasibility study appeared to indicate that similar activities could be systematically developed with a larger population of children in Dudley schools. It was evident that the age of six was not too young to begin; the Infant group had demonstrated enthusiasm, skills in observation, a wealth of vocabulary and knowledge more than adequate to sustain an exacting curriculum of a similar type. The performance of the seventeen-year olds appeared merely to confirm that the earliest enthusiasm and the developing skill in group discussion had not produced a workable method at adolescence. Similar work at the upper end of the Secondary school, beset by examination syllabus and full timetables would be too little and too late. The Sixth form discussion groups had provided - more than mere curiosity value - a useful standard of comparison by which the younger children were not found wanting. It was, however, the Middle school group at 10+ who demonstrated the most consistent degree of enthusiasm and useful language, tempered with skills, more particularly skill in deduction from their observations.

The results of a rewarding year's work were produced as an unpublished paper (28) presented to various teachers' societies and in-service training courses in both LEAs. This paper also excited interest amongst specialized groups of HIMs and other interested groups, such as the Historical Association. The study was fully written up in April 1977 but is not as yet published (29). The main conclusions reached were as follows: 'The trial groups had, in the course of 118 discussions, and their recordings, effered quite conclusive answers to the questions and objectives outlined at the outset of this phase. It had been demonstrated to the teachers' satisfaction that a process of unsupervised group discussion

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28. West M and J: The Child's Awareness of the Past: Concepts and Vocabulary. Unpublished Working Paper March 1975; cited by Joan E. Blyth in Young Child and the Past (op. cit.) et al.

29. West John: Pupils' Unsupervised Group Discussions of Various Antique Objects: Trial Exercises 1974-1977. Project Working Paper, April 1977. (167 pp.)

by pupils aged 6-11 years could in fact be carried on within the normal curriculum of the Primary school with no more artificial aid than a reasonable structure of written guides, instructions and scorebooks.

An interesting development of this project, as different sources were offered, was the increasing possibility of the combination of one type of evidence with another. Thus, for example, the experiences of discussion of several museum items such as the war medals, the Queen's portrait, the stone axes and the phonograph, were reinforced by the availability of a story dealing with the same item. Similarly, during the next year's work, the collection of pictures would provide further opportunities for similar cross-references.

There could be no doubt but that the entire series of discussions was successful. Every group entered into the discussions with some degree of ability and general interest. From the outset, it was evident that the six-year olds were relatively as able and certainly as willing to discuss each object as were their older fellows. As we have seen, if any were at a disadvantage, it occasionally appeared to be the oldest pupils. The adolescents were more self-conscious, more suspicious of the stature of the exercise as a 'test' than were the six-year olds or the Middle school pupils.....At the youngest extreme, the six-year olds were totally enthusiastic, uncritically approving of everything put before them. Their flow of words, ideas, conjectures, comparisons, judgements and personal associations were apparently inexhaustible.

Between the inexperienced enthusiasm of the Infants and the experienced cynicism of the Sixth formers, the ten-year old pupils took an effective middle place. Their serious, perceptive and sympathetic discussions were calm and courteous. The assessors' Tables reveal a high degree of observation and deduction, their empathy matched, in real concern and genuine liking, the enthusiastic acceptance of the Infants. Thus all these discussion groups tended to reveal a real potential, proving beyond doubt that the younger children were fully capable of conducting their own investigation within the peer-group to a reliable, constructive end.

As might have been expected from the nature of the exercise, the skills of deduction were at a premium.....the general level of deduction for each item is remarkably similar and consistent with the general average.....Of all the three groups, the Middle school children were above the general average in forming inductive conclusions from their observations.

Finally, it appeared that the exercise had demonstrated that a great deal might be learned from monitoring pupils' unaided discussion of evocative objects from the past on a larger scale. It appeared that the optimum time to develop this method to the full would be during the Middle or Primary school age-range, certainly no later than at ten years of age and preferably earlier.' (30)

It was evident that, given adequate planning, preparation and prediction, a class teacher could reasonably assume that discussion groups of this type could be programmed to take place, with the confidence that progress would be made and certain conclusions reached by the children. The continuing use of unsupervised peer-group discussions in conjunction with the 'teacher's planned intervention' envisaged by the Bullock Report (31) was therefore accepted as a convenient method of study for an even larger group of pilot schools in the next phase of this experiment, which was to commence in September 1976.

In view of these preliminary findings, with particular reference to age-range, and in anticipation of a research project in the form of a longitudinal study in schools over a period of four years, it was decided to 'peak' that study at

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30. West John: Young Children's Awareness of the Past. Trends in Education. Spring Issue 1978. pp. 11-12.

31. 'Exploratory talk by the pupils has an important function in the process of learning' p. 526
A Language for Life: Report of the Committee of Enquiry appointed by the Secretary of State for Education under the Chairmanship of Sir Alan Bullock F.B.A. Department of Education and Science. H.M.S.O. 1975. paras: 10.9-10.12 p. 145

10-11+, beginning at seven years of age. It was felt that the age-range 7-11 would be most usefully studied, as it bridged several of the Dudley types of Primary and Middle schools. It would, inevitably, be most at home in the Stourbridge Junior (7-11) schools or in the Dudley Primary (5-12) schools. To involve the 8-12 or 9-13 Middle schools would create an unavoidable break at 8+ and 9+ respectively. It was, however, decided to develop the project in as many different types of school as possible.

With a view then to a peak at 11+, in the Summer term of 1975 a further set of base-line exercises was devised for the then 10-11+ year-group in all Dudley schools. It was intended to establish an agreed set of basic criteria and to preserve an adequate record of the children's performance, in order to illustrate the normal abilities of an undiversified child population at the age at which the ultimate research project would be completed in 1980.

Two written test-essays were set, a vocabulary test, an arithmetic test and four picture tests. The written tests endeavoured to discover what children of this age thought and felt about the past, offered free personal association rather than a guided set of questions. Firstly, the children, 4,000 in all, were set to write on the unexplained title: 'Long Ago'. Next, the age-group was quartered and each 1,000 children were asked to write again. Group by group, the titles offered were: 'I Remember'; 'When Father and Mother were Children'; 'When Grandfather and Grandmother were Children' and 'A Hundred Years Ago'. These titles were intended to offer a widening field of time, from personal reminiscence, via family recollection, to 'History'. The resulting scripts were sorted into three broad categories conforming with the three main stages of the Piagetian scheme. There were indeed 38% who offered 'pre-operational' scripts of a trite, illogical nature, 58% who wrote ' concrete operational' essays which revealed a workmanlike effort, usually on one reasonably selected topic from a generation correctly recalled, and a minimal 4% of 'formal operational' writers who demonstrated a mature grasp and imaginative sweep over wider areas of past time, formulating their own conclusions and judgements.

The results of these written exercises revealed certain trends very clearly. It was seen that the overpowering meaning of 'long ago' for 45% of all the children was the recollection of dinosaurs. It might have been expected that the simple reason for such a preponderant choice must be the current, or recent school syllabus. This does not however appear to have been the case. In fact, the immediate response from class teachers was one of surprise that the majority choice, in all the writing, bore little or no relationship to the current teaching syllabus. The overbearing preponderance of dinosaurs was possibly a reflection from the BBC television series 'Man', widely used in schools, but it was also a series of impressions gained from television in the home, from comics and museums - Dudley Zoo's large scale display of dinosaurs must account for a great deal of local responses, as must even such ephemeral sources as plastic toys in cornflake packets and Airfix kits. The general absence of such response in terms of traditional History periods was not surprising, in view of the earlier description of the lapse of History in Primary schools. Here, the best that could be expected was a small collection of favoured characters. These included Julius Caesar, William the Conqueror, Francis Drake, Henry VIII, Robin Hood, Guy Fawkes, Lord Nelson and Queen 'Victory'. Here possibly, as was certainly the case of Edward VII, the influence of television as a source of accurate detail was well-marked. It was also evident that children did not usually commit themselves to much fact unless they were reasonably sure of their ground.

It was particularly interesting to note the extent of writing which chose to emphasise the contrast of the past with the present (21%). This was almost entirely adverse comparison in favour of today's affluent society. A few children wrote wistfully and unrealistically about the happier conditions of the past, usually in the vein of 'it must have been lovely then'; these were usually little girls who hankered after more romantic fashions. There were some writers who were attracted by the merits of lower prices in the past and there was also a small response to the idea of colourful adventure, 'when knights were bold'; these were exceptional.

It appeared that the child of 10 had sadly lacked much guidance in developing his awareness of the past around him. Yet, for the average and above average child of that age, his ability to respond to information from many sources, with or without the schools' influence, is greater than teachers generally suppose. In comparison with the media, the home background and local influences, the school appears to be remote during the formative Primary years. The child's developing awareness of the past, and the devising of a new curriculum of experiences capable of maintaining and extending it, will require a new set of classroom activities and tests for the Primary school which may, at first sight, appear to bear little relationship to 'History' as most Primary school teachers now recognize it. That curriculum might have a fairly limited conceptual basis; its full development might depend more upon experiences, skills, favourable attitudes and an adequate vocabulary than upon later-developing concepts of Time. It would certainly require a renewed assessment of the power of first-hand evidence when related to Primary school children's evident powers of deduction and reasoning from first principles. It might also be found that too much didactic teaching in the Primary school would be actively misleading. (32)

The results of the second written exercise confirmed the impression of the first, that the children's ability to respond to an unexplained title varied, not only from child to child, but also from title to title and from school to school. Responses were more concerned with significant objective data as the date of the period recalled became more remote. First or second-hand recollections of their babyhood, or of their forebears' generations produced more subjective, trivial accounts. More than half (58%) were capable of a reasonably

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32. 'In the majority of classes, however, the content of the children's work and their use of resources was prescribed, sometimes to the extent that there was insufficient opportunity for the children to incorporate information and ideas of their own or to make use of spontaneous incidents which arose.' Primary Education in England. Department of Education and Science (HMSO) 1978 para: 3.21. p. 27.

positive response to any of the titles on an average of all five tasks. The other half of the age-group offered fantastic or immature accounts of any of the subjects required. The positive writers were more adept at relating their recollections to family history and their immediate locality, though 'local history' as such was not much in evidence and national events were largely overlooked, except for the general background of the social conditions imposed by the great wars. Social conditions were the children's major preoccupation, seen mainly in terms of contrast and inferiority. Anachronism was risked only when a precise period of time was demanded by the title. These were often the evident results of misunderstanding of similar events or items, for example, confusion of motorcars with trains, crinolines with bustles, the Plague with the Black Death or cholera, the cinema with television, the first with the second World War, or Elizabeth with Victoria.

Success appeared to depend more upon a sympathetic attitude to the past than upon a wide command of factual knowledge but the idea of evidence or proof was relatively rare in these accounts. Certainly, the attitude formed to the past appeared to have been influenced less by the children's formal education than might have been hoped. When the impact of a particularly successful lesson, project or television programme was evident, it was unmistakable. Such instances were few, in view of the considerable amount of conscientious effort developed over a period of years by many schools. The children appeared to turn to their recollections of folk lore, family reminiscences, television, storybooks, comics and imagination, without appreciating that these could be related to other ideas and impressions gained by more formal learning in schools. Their vocabulary and written styles were generally weak but there was in all the accounts a considerable amount of latent curiosity, empathy, understanding and aptitude. These were the children's own unaided, unguided and unstructured reconstructions. It is certain that this resource of involuntary learning could be more adequately developed if a deliberate teaching strategy and set of

structures were adopted by teachers with children from the ages of seven to ten. (33)

The picture tests were devised to demonstrate the children's own levels of skill in perceiving evidence of change or difference, and particularly in sequencing separate but correlated picture-series. Firstly, two linked groups of printed frames from the Bayeux Tapestry, nine in all, divided into two sets of four, but linked by a common frame, having been shuffled, were given to the children to be re-sorted, each child working individually. Secondly, a set of six line drawings of a town centre at different stages of its historical development was offered to individual children with three of them fixed in place, leaving three spaces to be filled by the 'loose' pictures (34). A third simple picture selection test aimed to reveal empathy with antiquity by the special choice of the one antique machine in a set of seven other items of familiar modern household equipment. The fourth picture test, later to become a standard item in a series of pilot tests, showed a selection of drawings on an A4 sheet. These included a dinosaur, the Rocket, a television set, a Viking ship, a medieval knight, the Crucifixion, the Pyramids, a half-timbered inn, a Blenheim bomber and a Roman soldier. The pictures were lettered from A to J and the children were asked to set the letters into order from the earliest to the latest item.

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33. '13.12. Our impression is that changes in organization within schools in recent years have not generally been matched by changes in classroom practice....the important point is that when a new form of organization is adopted the work within the classroom should be consonant with it in spirit and intent.' p. 204
'10.11. The teacher's role should be one of planned intervention and his purposes and the means of fulfilling them must be clear in his mind....The teacher must devise situations in which the pupils will naturally adopt the kind of behavious he wants to encourage.' p.145
A Language for Life: The Bullock Report (1975)

34. The pictures for these tests were taken from:
'Town Story' by Edward Blishen (Blond Educational 1964)
and 'The Baye ux Tapestry and Norman Invasion' ed. Lewis Thorpe (London : The Folio Society 1973).
They are reproduced in Appendix I.

The vocabulary test required completion of 36 specialized words, ranging from 'HISTORY' to 'GENEALOGY', from 'PERIOD' to 'ARCHAEOLOGY' of which, in each case, the first three letters were given, with a definition of the word's meaning. This word list is appended on pages 383-384.

The mathematical test required the solution of 20 problems which involved the calculation of ages, dates or duration of time from two given dates including, usually, the present year. These sums are appended on pages 394-400.

The results of all these tests were satisfactory. The results of the four picture tests were as follows:- (There were 427 children for each test)

Picture Test 1:	(Dinosaur to Television)	Average score: 60%
Picture Test 2:	(Odd Man Out)	" " : 65%
Picture Test 3:	(Growth of a Town)	" " : 83%
Picture Test 4:	(Bayeux Tapestry)	" " : 80%

The vocabulary and arithmetical tests gave the following results:-

Vocabulary Test	Average score: 65%
Calculation of Dates and Ages	" " : 17%

These initial scores by children aged 10+ in 1976 are recorded for comparison with the results which will be gained from the Pilot group of our present four-year project at its conclusion in 1980.

By the Summer of 1976 it was possible to envisage a longitudinal research study, to begin in September 1976 and continue until July 1980. It was intended that the project should develop a systematic investigation of children's awareness of the past; should work primarily from tangible and pictorial evidence; should involve a considerable degree of children's active participation, more particularly in regular periods of peer-group discussion; should concentrate most particularly upon the skills of language required by pupils to express their developing concepts and explain their

decisions; should, as far as possible, also offer a large amount of pictorial, non-verbal stimulus; should explore the nature and scope of children's understanding of past time, more particularly in terms of change and seriation and should establish and foster an awareness in the children of the concept of authenticity in relation to evidence from the past. It was intended that a project with these aims would be based upon a systematic, permanent curriculum, capable of regular use by Primary school teachers. That curriculum should be seen by those teachers to be essentially skills-centred and thus relatively content-free; the process of working with evidence would usually take precedence over the acquisition of factual knowledge. It was decided to recruit a pilot group of Primary schools who would be prepared to commit a large number of children to a pilot project for 7-11 year olds from 1976-1980.

CHAPTER TWO:

THE BACKGROUND OF RESEARCH

There has been comparatively little experimental research in the field of historical understanding carried out with young children of Primary School age.

"On the teaching of history there seems to be no educational research comparable to that on the teaching of geography. This does not mean that there has been no activity amongst the teachers of history directed towards becoming clear about their aims and varying their teaching methods in such a way as best to achieve those aims. This activity does not, however, appear at present to have raised many problems that have led to research"(1).

Piaget paid no attention to historical time and very little to physical or internal time. He extended his work on children's understanding of number, space and quantity to speed and duration over limited terms of direct personal experience by very young children, but was not concerned with concrete operational experience of the remote past. His followers have attempted, with some success, to apply his schema to older children's understanding of the past; this type of research was fairly extensively carried out in the

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1. Thouless R.H: Map of Educational Research. N.F.E.R. 1969. Page 246.

1960's by staff and research students of the University of Birmingham working under the guidance of Professor E.A. Peel (2). Their work was mainly concerned with adolescents, its purpose being to verify the formal operation stage of reasoning about historical texts.

The earliest thinking on younger children's concepts of time long past, after Binet's scales were formulated in 1905 (3), was initiated by Mary Sturt in 1922. Her important battery of tests published in her book 'The Psychology of Time' (4), and in the most seminal article of all, written in co-operation with E.C. Oakden (5), has not been much extended until the present day. Those tests have been repeatedly confirmed (6) but little more has been added to their original findings. Much of this, and other studies of the thinking of Primary school children, has been carried out by psychologists rather than by teachers and tends to apply isolated tests carried out in more or less clinical conditions. Some, though not all of the researchers have been concerned with the curricular aspects of their work and its findings, or exceptionally, have endeavoured to associate a school curriculum with their set of tests, without much positive recommendation.

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2. E.A. Peel: Experimental Examination of Some of Piaget's Schemata....etc.
British Journal of Educational Psychology. Vol. 29. 1959. pp.89-102. See Table I No.6.

3. Binet: Binet-Simon Tests of 1905 and 1908.
A. Binet and T. Simon: The Development of Intelligence In Children. Baltimore, 1916.

4. Mary Sturt: The Psychology of Time. London; Kegan Paul, 1925.

5. E.C. Oakden and M. Sturt: The Development of the Knowledge of Time in Children.
British Journal of Psychology, Vol.XII. April, 1922. pp.309-335. See Table I No. 1 on page

6. N.C. Bradley: Growth of Knowledge of Time in Children of School Age.
British Journal of Psychology. No. 138, 1947. pp.67-77. See Table I No. 3.

In this, the work of Pistor (7), Kathleen Henry (8), Inkeri Vikainen (9) and Dr. J.B. Coltham are important exceptions. All the research available in their time has been thoroughly reviewed, in 1963 by Gustav Jahoda, (10) and in 1968 by Peter J. Congdon (11). The latter's thesis makes an outstanding attempt to grapple with the essential practical implications of the difficulties encountered by earlier research, in terms not only of indications of further areas of research, but also as a guide to possible curriculum development and classroom methodology.

Jahoda was more concerned with the intellectual development of language and understanding and was not concerned with the Piagetian stages of learning. He identified three approaches to previous research, 'the first focussing on the emergent experience of temporality of things in flux and change, with a gradual reaching into future and past. The methods used are mainly quantitative and observational in the continental European tradition. Examples of this are Freud and Malrieu.

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7. F. Pistor: Measuring the Time Concepts of Children. Journal of Educational Research. Vol.33. No. 4. 1939. pp.293-300. See Table I No. 3.

8. Kathleen Henry: A Study of the Development of Time Concepts in Children. Unpublished M.A. Thesis of the University of Liverpool. 1960. See Table I No. 9.

9. Inkeri Vikainen: The Development of Time Concept and Time Scheme. Report from the Institute of Education, University of Turku. 1961. pp.1-17. See Table I No. 10.

   J.B. Coltham: Children's Understanding of Some Terms Commonly used in the Teaching of History. Unpublished Ph.D. Thesis of the University of Manchester.1960 See Table No. 7.

10. Gustav Jahoda: Children's Concepts of Time and History. Educational Review, Vol. 15. 1963. pp.87-104.

11. Peter J. Congdon: An Investigation into Research on the Development of the Concept of Historical Time in Children in the Upper age-group of the Junior. Unpublished M.A. Thesis of the University of London. 1968.

In contrast to this, Anglo-American psychologists have been more preoccupied with the acquisition of a time vocabulary and with the growth of understanding of clock and calendar. Methods tend to be more formal, consisting of systematic questioning, or tests of various kinds. The frequently quoted studies of Ames and Spurger belong to this category. Lastly there are Piaget and his followers who have already been discussed.' (12) Jahoda tabulates six phases of development from five years of age to adolescence with progression under four headings: 'Past which can be present in mind and produce effect; Present as time actively employed; Anticipated future modifying present action and Notions of time and history and progression of historical interest.' The last develops from 'Mythological time' at 5-6 years to 'Beginnings of historical interpretation in adolescence'. Between nine and eleven Jahoda sees the child concerned with Objective time and the possibility of control and continuity of past with the present. He hoped that research might be undertaken to verify these trends.

A selection of some of the main studies available can best be summarised as shown in Table I on the following pages, 42 to 50:-

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12. Jahoda. G. : op.cit. p.90.

TABLE I

ABSTRACT OF SOME RESEARCH INTO CHILDREN'S CONCEPTS OF TIME AND HISTORY, 1922 - 1971

AUTHORS: PUBLICATIONS AND AIMS	DATE	SAMPLE	AGES	FORMAT OF TESTS	DESCRIPTION OF TESTS	
1. E.C. OAKDEN AND M. STURT: The Development of the Knowledge of Time in Children Aim: To trace the growth of a sense of time and to assess the educational implications of their findings. (British Journal of Psychology Vol. XII April 1922 pp.309-335).	1922	358	8-14	Verbal Number Pictures Written	Time-questions Order of dates Temporal absurdities Temporal completion Pictorial identification Temporal memory Making an appointment	1. There is a sharp improvement in performance between ages 10-11. 'The most important period of its development seems to be about age of 11, when there appears to be a rapid improvement in all types of time knowledge. 2. Growth is a slow process, arriving 'nearly at adult level' about 13-14. 3. Children find it difficult to arrange dates correctly: up to the age of 11 dates and conventional 'periods' have little meaning. 4. Most remote epochs are most readily distinguished 5. Indications of time appear to play a less important part than those of space. 6. Time charts could be more extensively used.
2. M.M. LEWIS: The Beginning of Reference to Past and Future in a Child's Speech Aim: To deal with the way in which reference to the past and to the future come to be differentiated in the early stages of a child's adoption of conventional language. (British Journal of Educational Psychology. Vol. 7. pp.39-56).	1937	1	1-3	Observation	Reference to absent situations. The growth of linguistic intercourse.	1. Shows how unlikely it is that the occurrence of reference to the past or to the future is a sudden event in a child's life. 2. Reference arises as a result of a number of factors, of which the most important are the child's own manipulative and declarative needs in speaking and the influence of adult reference to past and future. 3. The factor of social intercourse may play a decisive part.

TABLE I (continued)

AUTHORS: PUBLICATIONS AND AIMS	DATE	SAMPLE	AGES	FORMAT OF TESTS	DESCRIPTION OF TESTS	
3. F. PISTOR: Measuring the Time Concepts of Children Aim: A psychological analysis of the difficulties experienced by children in conception of time and time relations. To assess the implications for development of school curriculum. (Journal of Educational Research Vol.33. No.4.1939 pp.293-300).	1939	120	9-11 16-18	Pictures	Time-order relationships Temporal absurdities Time-causal sequence	1. The tests proved to be a valid instrument for further research. 2. There is a need for a study of concepts as the basis for planning curriculum. 3. Students with recent college history were found to be superior to those in the other group.
4. K.C. FRIEDMAN: Time Concepts of Elementary School Children (The Elementary School Journal: 1944. pp.337-342).	1944	697	5-11	Verbal Oral Written	Questions on 'long ago' Time-line Time-words and dates Sequencing	1. The child perceives ideas near to him in time earlier than he perceives those that are remote. 2. There is not so much logic in the child's thinking about the future as about the past. 3. The idea of 'tomorrow' appears to be less definite than the concept of 'yesterday'. 4. By 11 only 4 of 17 time words, and no dates, were known to 90%. Teachers should guard against indiscriminate use of such words and dates. 5. By the time pupils are 11 they have a satisfactory comprehension of our system of time. 6. Sex differences were found to be statistically insignificant; the factor of sex is not important in the acquisition of time concepts.

TABLE I (continued)

AUTHORS: PUBLICATIONS AND AIMS	DATE	SAMPLE	AGES	FORMAT OF TESTS	DESCRIPTION OF TESTS	
5. N.C. BRADLEY: Growth of Knowledge of Time in Children of School Age Aim: (1) To trace the growth of understanding of everyday time-words. (2) To explore development of the child's grasp of the universal and continuous nature of the time-scheme. (British Journal of Psychology: No.138, .1947 pp.67-77).	1947	176	5-13	Verbal Picture Number	Questions test Picture-arrangement Order of dates Temporal absurdities	1. There is a definite order in which time-knowledge is acquired. 2. Arithmetical ability is important. 3. The capacity to understand the conventional time schemes is later in developing than is usually believed. 4. The process is gradual and continuous; there is no sudden acceleration at 10-11.
6. E.A. PEEL: Experimental Examination of some of Piaget's Schemata concerning children's perception and thinking and a discussion of their educational significance: Aim: Four separate researches are described, testing the substance of Piaget's schemata for: (1) haptic	1959	-	-	-	-	- See below -

TABLE I (continued)

AUTHORS: PUBLICATIONS AND AIMS	DATE	SAMPLE	AGES	FORMAT OF TESTS	DESCRIPTION OF TESTS	
(2) spatial (3) logical and (4) moral judgements. Cites: A.R. LODWICK Aim: To test the hypothesis of three stages of development in logical judgement.		30	7-15	Textual: Alfred the Great Stonehenge Florence Nightingale	Comprehension tests	1. Provides definite support for Piaget's schema of children's logical development.
R. LOUGHRAN Aim: To investigate some children's moral judgement. (British Journal of Educational Psychology, Vol. 29 pp.89-102).		30	7-15	Textual: Gunpowder plot Thermopylae Cassino.	Comprehension tests	
7. J.B. COLTHAM: Children's understanding of Some Terms commonly used in the teaching of history Aim: Using Piaget's description of mental behaviour as a criterion, the development of the child's understanding of terms is examined. (Unpublished Ph.D. Thesis. University of Manchester 1960).	1960	200	9-11	Drawing test Verbal Pictures Models	Understanding of six terms: 'King, ruler, invasion, early man, trade, subject', illustrated by drawings and descriptions.	1. Understanding of terms may be related to emotional and social experiences. 2. Stages, as described by Piaget, can be discerned. 3. These stages are not typical of those in other fields of knowledge. 4. Understanding of historical terms develops at a later stage than understanding of material which can be experienced at first-hand.

TABLE I (continued)

AUTHORS: PUBLICATIONS AND AIMS	DATE	SAMPLE	AGES	FORMAT OF TESTS	DESCRIPTION OF TESTS	
8. K. LOVELL AND A. SLATER: The Growth of a Concept of Time Aim: To trace the development of concepts of simultaneity, synchronisms, intervals, order of events, concept of age and awareness of interior time. (Child Psychology and Psychiatry. Vol. 11960. pp.179-190).	1960	100 (50) (50)	5-15 5-9 8-15 (ESN)	Piagetian Practical Observation Diagrams Pictures	Doll-race Flow of water Age of trees Estimation	1. There is a steady increase in perception of simultaneity with chronological age. 2. 8-9 year old children asked for more information. 3. The context of questioning will affect the answers. 4. Estimation of interior time improves with age. 5. Many of Piaget's findings are substantiated, but notions of time are not available to all children at once or in the same degree. 6. ESN pupils aged 16-17 have an overall understanding of time about equivalent to that of the average 9 year old.
9. K. HENRY: A Study of the Development of Time Concepts in Children Aim: (1) To examine Piaget's claim of progressive construct and three stages of development. (2) to investigate relationships between chronological and mental ages with Piagetian and non-	1960	56	5-11	Piagetian Verbal Vocabulary Picture-tests	Temporal vocabulary Word meanings Temporal absurdities Seriation	1. The general developmental picture appears to be similar to Piaget's stages, although it has not been possible to classify performance strictly in accordance with his stages and sub-stages. 2. Sex differences, in favour of boys, continually emerge. 3. Verbal factors are more important than Piaget acknowledged. 4. A 'general facility' with temporal matters emerges between 8.6 and 9.0.

TABLE I (continued)

AUTHORS: PUBLICATIONS AND AIMS	DATE	SAMPLE	AGES	FORMAT OF TESTS	DESCRIPTION OF TESTS	
Piagetian tests. (Unpublished M.A. thesis: University of Liverpool 1960).						
10. I. VIKAINEN: <u>The Development of Time Concept and Time Scheme</u> Aim: To ascertain whether it was possible by a chronologically accentuated method of teaching to create a more systematic comprehension of time periods. (Report from the Institute of Education, University of Turku: 1961, pages 1-17).	1961	111	11-12	Written Number	Order of dates	1. Focussing the attention on chronologically seems to further the development of schemes of time periods. 2. Schemes of time periods in different schools' classes may in the 5th grade (11-12) show considerable deviations which indicate the influence of teaching. 3. Schemes of time periods seem to be significant in understanding chronological relations in history. 4. There is reason to detach different forms of time concept. 5. Further investigation is needed into the type of teaching best suited to further the development of schemes of time periods and the emphasis to be placed on time relations at the beginning of history teaching.

TABLE I (continued)

AUTHORS: PUBLICATIONS AND AIMS	DATE	SAMPLE	AGES	FORMAT OF TESTS	DESCRIPTION OF TESTS	
11. D. CASE AND J.M. COLLINSON: The Development of Formal Thinking in Verbal Comprehension Aim: To establish whether the influences which Secondary modern and F.E. pupils draw from History, Geography and Literature texts correspond to Piaget's formal operational stage of reasoning. (British Journal of Educational Psychology. Vol.32. pp.103-111).	1962	90	7-17	Textual St. Dunstan etc.	Comprehension tests	1. The subjects experienced more difficulty with History texts than with Geography or Literature. 2. Other cultural factors and experience are as important as chronological and mental age in development. 3. The incidence of formal thought in the Junior group makes one chary of accepting strict age divisions. 4. The reaching of equilibrium in one stage is essential before the development of the next stage. 5. The series of stages is more significant than their actual timing.
12. R.M. BEARD: Further Studies in Concept Development Aim: To study concepts of time related to age, duration and order of events, and to confirm the Piagetian stages. (Educational Review: Vol. 17, 1964, pp.41-58).	1964	50	5-7	Piagetian Pictures Practical Observation Verbal-oral	Assigning ages to pictures of people and trees. Observation of levels of liquids.	1. Older children appear no more successful than younger ones nor are there any noticeable differences due to intelligence. 2. The capacity to give a verbal account of a relationship does not suffice to show full understanding. 3. Success with different kinds of concept is more influenced by familiarity of the item than by apparent difficulty of the concept. 4. There is no inevitable transfer of understanding in one situation to similar ones, even though these may seem easier. 5. In the case of time concepts, there is some overlap with spatial relationships. Time is frequently represented by an ordered sequence of points on a line.

TABLE I (continued)

AUTHORS: PUBLICATIONS AND AIMS	DATE	SAMPLE	AGES	FORMAT OF TESTS	DESCRIPTION OF TESTS	
13. R.N. HALLAM: Logical Thinking in History Aim: Piaget's system of stages of development is used as criteria against which inferential thought in History can be measured. (Educational Review. Vol. 9. 1966, pp.183-201).	1966	100	11-16	Textual Mary Tudor Norman Conquest Civil War and Ireland	Comprehension tests	1. 16.2 to 16.6 appears to be the chronological age at which formal thinking in History begins, and at mental age 16.5 to 18.2. 2. Concrete thinking in respect of History could be said to begin in the 12th year. 3. Isolated statements do not suffice to identify formal thought. 4. Pre-operational thought appeared among the oldest and some formal thought among the youngest.
14. R. HOLLANDS: Some Aspects of Time Aim: To investigate children's ability to judge duration and simultaneity. (Primary Mathematics. Vol. 8. No. 1 1970. pp.46-55).	1970	7	7-10	Piagetian Practical Observation Oral	Motor car races Estimation of internal time.	1. Pupils' commentary transcribed from tape recording without further observations.

TABLE I (continued)

AUTHORS: PUBLICATIONS AND AIMS	DATE	SAMPLE	AGES	FORMAT OF TESTS	DESCRIPTION OF TESTS	
15. R.C. CROMER: The Development of the Ability to Decenter (sic) in Time Aim: To study children's developing ability to decentre temporally. (British Journal of Psychology. Vol. 62. No. 3 (1971) pp.353-365).	1971	70	4-7	Piagetian Practical Pictures	Story sequences	1. Children do not begin to decentre until after mental age 4-11. 2. Not until after mental age 5-11 do all children decentre. 3. Ability to decentre did not depend upon linguistic forms. 4. Co-ordination of temporal viewpoints *proved most difficult.*
16. B.M. HERMELIN AND N. O'CONNOR: Children's Judgement of Duration Aim: To investigate the ability of young children to distinguish a short from a long duration. (British Journal of Psychology. Vol.62 No.1 (1971) pp.13-20).	1971	40-80	5.4 or 5.5	Practical Observation Oral	Temporal discrimination	1. Though children do not tend to orientate spontaneously towards a temporal stimulus-dimension, such orientation increases with specific instruction. 2. The difference between the ability to make non-temporal as compared with temporal judgements is more marked when visual than when auditory stimuli are given.

Since Congdon's review there has been little further original development in this field, with the exception of further work by Coltham (13), a few more specialized papers on specific aspects of the Piagetian theories (14) and, finally a recent N.F.E.R. publication for teachers, by Geoffrey Partington. (15). During the period 1970-1980 more practical work has taken the form of Schools Council projects carried out in schools nationwide, the most influential in the field of Primary School children's understanding of the past being the project on Time, Place and Society 8 to 13 developed between 1971 and 1975, which has extended the essential thinking into actual classroom practice (16). Otherwise, the most dynamic rethinking of children's potential and 'the consciousness of their own minds' has been the contribution of Margaret Donaldson (17), the outcome of personal

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13. J.B. Coltham: The Development of Thinking and the Learning of History. The Historical Association. Pamphlet TH.34. 1971.

14. R. Hollands: Some Aspects of Time. Primary Mathematics. Vol. 8 No. 1. 1970. pp.46-55 and:

    R.C. Cromer: The Development of the Ability to Decenter in Time. British Journal of Psychology. Vol.62. No. 3. 1971. pp.353-365. and:

    B.M. Hermelin and N.O'Connor: Children's Judgement of Duration. British Journal of Psychology. Vol.62. No.1.1971 pp.13-20.
    See Table I Nos.14,15 and 16.

15. Geoffrey Partington: The Idea of an Historical Education. N.F.E.R. Publishing Company. Windsor. 1980.

16. Professor Alan Blyth et.al.: Place Time and Society 8-13: An Introduction. and Curriculum Planning. Collins. E.S.L. Bristol, for the Schools Council. 1976.

17. Margaret Donaldson: Children's Minds Fontana-Collins.1978.

experience of work with both Piaget and Bruner and drawing largely upon the studies of Chomsky (18), Vygotsky (19) and others who, historians manqués, have been primarily concerned with the development of children's language.

There has been, during the past decade, an additional body of publication in terms of curricular suggestions based upon observations and inspection of children's work in Primary schools by Her Majesty's Inspectors, but this, not being classed as formal research, is dealt with in a later Chapter and in a different context (20).

It has been generally acknowledged that the relative lack of adequate research into young children's concepts of historical time is undoubtedly due to the inherent difficulties of the subject, History, and the secondary nature of its evidence. This difficulty presents problems to pupil, teacher and researcher alike. 'History is difficult because it deals with secondary perception' (21). Unlike the child's experience of number and quantity, which emerge as early as six to seven years of age,' understanding of historical material develops at a later stage than understanding of materials which can be experienced at first hand.' (22). Even in relation to personal experience of small-scale

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18. N. Chomsky: Aspects of the Theory of Syntax. Cambridge, Mass. M.I.T. Press, 1965.

19. L.S. Vygotsky: Thought and Language. Cambridge, Mass. M.I.T. Press, 1962.

20. See Chapter Eight, pages 318 - 324

21. Coltham J.B: Junior School Children's Understanding of Some Terms. p.219.

22. Congdon. P.J: An Investigation into Research etc. op.cit. Conclusion no. 5. page 134.

happenings in physical time, in terms of duration and speed, Kathleen Henry identifies a formidable body of difficulty experienced by the younger child: '(i) He is unable to differentiate between space and time; (ii) He is unable to separate duration from the activity which occupies it; (iii) He is unable to construct the inverse relationship between time and speed; (iv) He often has difficulty in understanding temporal terms and in expressing his own ideas; (v) He appears to have more difficulty with the simplified control situations than Piaget himself suggests' (23).

Case and Collinson found that their group of 90 secondary modern school pupils' experienced more difficulty with History texts than with geography or literature' (24). As Henry observes: 'The adult's temporal horizon, his sense of both history and of futurity, is acquired only after years of experience, a slow and gradual process.' (25) What chance then, have very young children of understanding such a mystery? 'What confusion reigns for a long time in the child's little head before he grasps that the ever-moving present turns today into yesterday and tomorrow into today' (26).

It is little wonder that much of the adult commentary on children's possibility of comprehending remote time is extremely pessimistic. 'Evidently, children's time perspective before the age of about nine is very shallow, becoming nebulous beyond the span of one or two generations' (27).

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23. Henry K: A Study of the Development of Time Concepts. op. cit. p.291.

24. Case D. and Collinson J.M: The Development of Formal Thinking etc. op. cit. p.105.

25. Henry K: op.cit. p.20.

26. Stern. L.W: The Psychology of Early Childhood: Allen & Unwin. London 1924.

27. Jahoda G: op. cit. p.96.

'Not until the pupils are eight years old are they able to distinguish the past from the present'; (28) 'Since the time sense of adults is known to be weak, the ideas that children have about time must surely be indefinite and confused'. (29). These views are the typical outcome of much of the research so far carried out.

The main areas of investigation have been concerned with the ages and stages at which a 'time concept' could be seen to be developed in children of different ages. The chief concern has been to discover whether any such development is gradual or subject to periods of acceleration or 'time of demarcation'. Much attention has been paid to whether stages of such development are discernible, in what sequence they occur and with which chronological or mental age-groups they can be expected to manifest themselves. These studies inevitably raise the further question as to whether age is the decisive factor in pre-determining children's progression, or whether 'other factors' must be indentified. Surprisingly little attention has been paid to any adequate definition of what is meant, in so many different studies, by 'a concept of time'.

As the Table shows, approaches to the study vary as widely as Jahoda described. Some researchers have adopted a highly verbal, linguistic mode of investigation, in some cases making a complete study of the nature of 'temporal language' itself. The possibility has been expressed that 'the child has temporal notions before he can express them verbally'; (30) conversely

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28. Frederick Pistor: Measuring the Time Concepts of Children. Journal of Educational Research. Vol. 33. No. 4. 1939. page 293.

29. Kopple C. Friedman: Time Concepts of Elementary-School Children. The Elementary School Journal. 1944. p. 337.

30. Decroly and Degan J: (1913) cited by Kathleen Henry: op. cit. p.36.

others have warned of the danger of pseudo-concepts being falsely indicated by precocious language (31). Most are agreed however, that 'the development of language seems to mark an important step forward in the acquisition of time concepts' (32). Most of the traditional batteries of tests since Oakden and Sturt's contain an element of 'time-words' or 'temporal language' (33).

Another mode of study might be referred to as the 'chronological-skills' approach, largely concerned with seriation and inevitably bound up with what Vikainen has referred to as a 'mathematical-time' concept (34). The ability to understand what is meant by 'earlier and later', the 'knowlege of characteristics of definite epochs and the ability to place these in correct order' (35) has usually involved sets of verbal questions. Such tests call upon the prerequisites, not only of considerable verbal ability and general knowledge, but also, most difficult of all, some mathematical skills.

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31. Jahoda G: op.cit. p.88. 'Knowledge of the verbal symbol is no guarantee that the corresponding concept has been fully assimilated.

32. But C.F. Congdon P.J. op.cit. p.5 'A child may use many words long before he understands the concept in question, but there are occasions when his mental processes may be well developed although he does not use the appropriate expressions'.

33. 'The inability to use a word correctly does not always mean that the experience connoted by the adult use of the word is lacking' Oakden & Sturt p.310.

    Kathleen Henry: op.cit. p36.

    e.g. Friedman 1944; Henry 1960; Coltham 1960. See Table I.

34. Vikainen I: The Development of Time Concepts and Time Schemes. op.cit. p.3.

35. E.C. Oakden and Mary Sturt: op.cit. p.310.

Congdon points out (36) that all studies similar to Oakden and Sturt's must involve number concepts rather than historical understanding; indeed various testers repeatedly comment upon the amount of children's error which was evidently due to miscalculation. (37). Seriation and much of the research which is relevant to its investigation and development is more fully dealt with in Chapter Four.

Very few researchers have endeavoured to adopt a non-verbal system of testing. Indeed, it is ironic that, although much of Piaget's originality of approach lies in his non-verbal experiments, some of his followers have applied themselves to the question of formal operational reasoning which fails to avoid a heavy dependence upon texts and their analysis. In this context Coltham's work is unusual in its endeavour to use children's drawings and model-making as indicators of the levels and nature of their understanding of such historical expressions as: 'King, early man, invasion, ruler, trade and subject'. Kathleen Henry also used pictorial material on houses, vehicles and the seasons as tests, as does Pistor. Pictures are usually used to demonstrate children's ability to cope with sequences and seriation, as described in Chapter Four.

With older children,the concentration on inferential thought and formal operational reasoning has inevitably led to studies of children's responses to moral questions and logical deduction. 'Was Dunstan a good man?' (38) 'Could King Alfred cook?'

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36. Congdon P.J. op.cit. pp.134. p.13. p.22. p.56.

37. Oakden and Sturt. op. cit. p.314: 'The difficulty... for the children seemed to be partly due to their inability to perform the necessary calculations'.

38. Case D. and Collinson J. M: op.cit. Appendix I. pp. 110-111.

'Was William I cruel?' (39) are typical questions in this approach to adolescents and younger children. With groups of children of mental ages younger than sixteen one would be surprised to see such abstruse questions adeptly answered, particularly in the venue of the secondary modern schools of the 1960's. Wisely, no-one appears to have attempted any investigation of children's failure to appreciate the dubious logic of 'causation' in historical events and accidents; the additional difficulties of duration also appear to have been conceded without much investigation, except at direct pre-operational levels. (40)

Einstein asked in 1933: 'Is time immediately apprehended, is it innate, or is it an understanding gradually acquired?' (41) Surprisingly rare are any investigations, or even much reported observation of the exact nature of 'historical concepts' or what we mean precisely when we refer to them. As Congdon remarks: 'an appreciation of time goes far beyond chronology' (42), yet one searches in vain for studies which have endeavoured to investigate children's concepts of the nature of evidence, of authenticity or of empathy with the past. This deficiency is the main reason for the title of this thesis: 'Children's awareness of the past.' A 'concept of time' remains to be defined before further study can take place. It may well be that nothing as yet, in that context, has adequately extended the classic study of J.W. Dunne written in 1927 (43) and a source of inspiration to J.B. Priestley and other writers.

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39. E.A. Peel: Experimental Examination of some of Piaget's Schemata. etc. British Journal of Educational Psychology Vol. 29. 1959. pp.95-96.

40. R.N. Hallam: Logical Thinking in History. Educational Review. Vol. 19. pp.197-199.

    e.g. B.M. Hermelin and N. O'Connor: Children's Judgement of Duration. British Journal of Psychology Vol. 62. No. 1, 1971. pp. 13-20.

41. Einstein A: Origins and General Theory of Relativity Glasgow University Press No. 30. 1933.

42. Congdon P.J: op.cit. p.9.

43. J.W. Dunne: An Experiment with Time. A and C. Black, 1927.

Jahoda pointed out (44) that 'many of the writers cited have been exclusively concerned with the child's ability to handle conventional time divisions, leaving aside the conceptual distinctions between modes of measuring periods or intervals and the actual passage of time in terms of changing events.' Vikainen helpfully identifies (45) three forms of time concept, primary, secondary and tertiary. The primary form is the direct experience of time, the chief concern of psychologists working with very young children at an intuitive stage; this is variously referred to in their writings as 'psychological, interior, personal or physical time'. Its study is characterized by attention to conservation, reversibility, speed, duration and seriation, and experiments in those fields are usually physical, pictorial or mechanical rather than verbal. Secondary time, Vikainen suggests, 'can be defined as the comprehension of temporal relations by means of secondary criteria, without any time measures'; a sense of duration and order are as pects of the secondary form. It is this area of study which, being usually investigated by means of linguistic expression, may occasionally prove misleading. The tertiary concept comprises all time conception which presupposes a relatively high degree of mathematical skill which, regrettably, younger Primary school children may not command. It is in this context that Vikainen defines a mathematical time-concept. Thus Oakden and Sturt, in setting out 'to enquire into the knowledge and appreciation of time as measured by instruments of precision and arranged in a conventional scheme', were postulating the existence of a tertiary stage of development at the age of eight-plus.

For Piaget the development of time, as the development of other concepts , consists of a series of stages; the child slowly attains an operational understanding of time through the growth of his understanding of the constituent elements of succession, simultaneity and duration. Only at the third stage

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44. Jahoda G: op.cit. p.92.

45. Vikainen I: op.cit. pp.1-3.

can we find 'the opera tional construction of the qualitative durations', that is a systematic and simultaneous solution. Oakden and Sturt distinguished only two stages of historical understanding, negative and positive (46). In the second stage the child begins to distinguish historical periods and successive epochs; 'the earliest distinction the child makes is between the present and an historical past which is as different as possible from the present.'

There appears to have been very little agreement on the nature of time concepts and the stages, if any, of their development other than a few inconclusive attempts to make the Piagetian schemata 'fit' at only one or another single stage. There have been no truly longitudinal studies so far. We are persuaded to agree with Congdon that; 'it is yet to be established whether the concept of historical time is the ultimate development of time concepts or whether it is one aspect of a wider concept in which all the various facets of time are integrated.' (47) Coltham concludes that: 'historical thinking may appear very different to the logical form of thought outlined by Piaget.' (48) She traces a sequence of the development of children's thinking about the past from anachronism to a 'string' of associations and finally to the perception of 'an age'. Jahoda suggests a progression from myth and legend at 5-6, confirmation of fact from an adult from 9-10, an idea of continuity from 11-13 and some understanding of the nature of 'progress' from 13-16 (49). Kathleen Henry was satisfied that 'the development of a concept of time appears to follow the course indicated by Piaget and to proceed from an intuitive, perceptive stage, through an intermediate stage, when the child is beginning to apprehend relationships, to a final, operational stage when he can deal with those relationships with facility' (50). To Bradley, the 'definite

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46. Oakden and Sturt: op.cit. p.319.

47. Congdon P.J: op.cit. Conclusion no.23. p.136.

48. Coltham J.B. op.cit. p.223

49. Jahoda G: op.cit. Table 1 p.102.

50. Henry K: op.cit. Conclusion 1. p.295.

order in which time knowledge is acquired' is: 'first that having a personal reference, secondly, that relating to the organization of the caldendar of months and of the week; and thirdly, and most difficult, that more particularly involving the element of duration' (51). In all this discussion it appears to be generally agreed that an order or sequence in which the child's historical concepts - whatever they are - are acquired conform, more or less, with the Piagetian stages but that their rate of acquisition is slower than the acquisition of other more 'physical' concepts. Congdon traces their development 'from the personal to the impersonal, from the short span to the longer, from the concrete to the abstract, observed in the same pattern, at different rates, among children of all intellectual levels.' (52).

More recent observation appears to suggest that the endeavour to identify any recognizable phases or stages with chronological age-groups is immaterial. Margaret Donaldson comes directly to this point: 'children are not at any age as egocentric as Piaget has claimed and are not as limited in their ability to reason deductively as Piaget and others have claimed. The ability shows itself most markedly in some aspects of their spontaneous behaviour and we have seen that it reveals itself with great clarity in the comments they make while listening to stories'. (53). It is significant that as much research as there is has usually avoided the concrete operational stage and its possibilities. As Kathleen Henry observed (54), Piaget - and thus his followers - under-rated the potential of the child from seven to eleven. Yet,

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51. Bradley N.C: op.cit. p.71.

52. Congdon P.J: op.cit. Conclusions 1 and 2. p.134.

53. Donaldson M: Children's Minds. op.cit. pp.28-31.

54. Henry K : op.cit. Chapter 3. p.87.

frequently, researchers have commented on the blurring of any meaningful division between different age-groups. This cannot be indefinitely countered by merely admitting that stages will inevitably differ, not only from child to child, as from adult to adult, but from concept to concept and even from test to test. As the problems of 'regression' or precocity accumulate and the doubtful nature of 'equilibrium' is challenged (55) the entire nature of a logical, or biological, structure becomes questionable.

Case and Collinson point out that, having used a tiny sample of ten Junior school children aged seven to ten, 'as an aid to the validitation of the tests', the averages of concrete level answers showed little difference between the Junior group and the 11-14 year-olds. 'All the individuals tested, regardless of chronological or mental age, scored at least one answer at the formal thought level...this would indicate the occurence of formal thought well below the age of eleven stipulated by Piaget....'. Again: 'the evidence of formal thought below the age of eleven years would however tend to discredit Piaget's age limits.' (56) Similarly, Hallam observed, in the course of his investigation into logical thinking, that although, for every age-group from ten to seventeen most answers were graded at the concrete level, 'averages of the subjects' grades reveal that pre-operational thought occured amongst the oldest pupils... while a few younger pupils were capable of formal thought at times...' (57) Kathleen Henry's Piagetian tests indicated that: 'the stages of development, as seen in this investigation are not always as clear-cut as those described by Piaget.... a general

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55. Jerome S. Bruner: Inhelder and Piaget's 'The Growth of Logical Thinking' British Journal of Psychology, November.1959. p.365.

56. Case D. and Collinson J.M: op.cit. p.107.

57. Hallam R.N: op.cit. p.192.

facility to deal with temporal matters...appears to emerge in these children between the ages of 8.6 and 9.0' (58). Dr. Coltham's tests persuaded her that: 'the general level of attainment apparently typical of the age-group (i.e. 9-11 years) is less advanced in the field of history than in fields of knowledge where first-hand experience is possible.' Even so, she concluded that: 'the mental behaviour found by Piaget to be typical, in general, of the 7-11 age-group, i.e. concrete operations, does not appear typical for the six terms used in teaching history which have been examined' (59). All six of her terms raised an approach identifiable with concrete operations, but four of the six gave responses appropriate to the stage of formal operations and five of the six revealed re-operational responses, though the mental age of none of the sample was below seven years.

Bruner goes further when he challenges 'the rather turgid notion of equilibrium' - 'for if it is the case that the stage of concrete operations develops an equilibrium as earlier described, how comes it that the child gets beyond the stage to that of formal operations?' For Bruner, the child at any age, but particularly at adolescence, makes progress in his thinking, not by the development of 'a propositional calculus' but because of 'the vicissitudes of coping with demands'. 'So', Bruner concludes, 'the concretely operational child need not manipulate the world of potentiality, (save on the fantasy level) until pressure is put upon him, at which point propositionalism begins to mark his thinking....in short...the 'operations' of which Piaget writes so brilliantly are sub-species of broader programmes or strategies...they grow in terms of the changing objectives of such strategies and are responses to the vicissitudes through which the person is going in pursuit of his objectives....They are talking about their tactics of thought without sufficient regard for the fact that tactics derive their direction from the strategies of which they are

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58. Henry K: op.cit. Conclusions 2 and 4. p.318.

59. Coltham J.B. op.cit. p.219.

part' (60).

From the Table on page 42 it is evident that the chief concern of most researchers has, nevertheless, been to establish an age at which the child's concept of time can be said to have begun to develop, or to have become reliably established. Their findings are contradictory, though there is a possible general consensus of opinion on the fact that any development is gradual throughout childhood and into adolescence. What is evident from all the different findings is that at any time between the ages of four and fourteen a great deal of development can be demonstrated by one means or another. Whether it is any more helpful to endeavour to trace 'stages' in that development is doubtful. The Dudley project would seem to indicate support for those studies which have asserted an earlier rather than a later date for operational development; it certainly began from the premise that most of these researchers under-estimate the possibilities of a high expectation of younger children and that some give an unfortunate impression of condescension.

Much effort has been expended needlessly on the quest for turning points or periods of acceleration. 'Time concept assumes adult form from about eleven' (Congdon, 1968); 'Growth is a slow process, arriving at nearly adult level at about 13-14' (Oakden and Sturt, 1922); 'Concrete thinking in respect of history could be said to begin in the twelfth year' (Hallam, 1967); 'even at the age of eleven the concept of 'century' was not fully established and the ability to deal with remote periods was correspondingly uncertain' (Henry, 1960); 'The child has successful grasp of long periods of years at nine' (Bradley, 1947); 'Children demonstrate the ability to name an epoch at ten' (Coltham, 1960). The idea of an acceleration point at eleven, originally postulated by Oakden and Sturt does not appear to have been

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60. Bruner J.S: op.cit. p.369.

confirmed by later research, but it seems generally agreed 'that the development of time concept is slower than is usually presumed, especially by those who plan curricula.' But, as the Table on page 42 reveals, the samples used to support such generalizations have been small, the duration of the various tests has been short and, occasionally, severely limiting factors have handicapped the children. It is noticeable, for example, how much lower results have been where secondary modern pupils were used as subjects before comprehensive school classes were available.

Many of the tests, as Margaret Donaldson has observed, reveal the egocentricity of the tester, rather than of the children tested. It is evident that in many cases the 'subjects' have not fully understood what they were supposed to do, were unfamiliar with the speech and mannerisms of the tester, were misled by complicated apparatus or perplexing forms of heavily loaded language and by the cold-blooded nature of the 'experiment'. In some of the cases of very young pre-school and Infant children, one senses the familiar situation of the perplexed child trying politely to offer whatever answer the stranger seems to wish. Certainly their failures are often failures of communication not of understanding; 'the questions which the children were answering were not the questions the experimenter had asked...if we cannot get children to reason when we contrive experiments, whereas we can observe their reasoning spontaneously, then we must ask why' (61). Imaginative and perceptive Infant school teachers are fully aware, from their day-to-day observation of young children and experience of their daily work, that their sense of past time is not totally uncomprehending, but

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61. Bruner J.S: op.cit. p.369.

demonstrates a high general degree of curiosity and empathy about times 'when Daddy was a little boy or when Nan was a little girl'. They are avid for stories of 'long ago'. One needs only ask a class at any age from 7 to 11 whether it was possible for their teacher to have taken a photograph of a live dinosaur to raise some hilarity; or, offer any small boy a picture of a vintage car and allege it to be your own latest model. Such simple observations constantly disprove a great deal of generalization about children's failure to discriminate in time. It may well be that young children's 'sophistication' - whatever that may be - has increased considerably since 1922, or even since 1947. Certainly for this, or some other reason, we can no longer accept Sturt's observation, and Bradley's confirmation, 'that primary children lump anything together more than a few years ago into an undifferentiated past in which Granny and Robin Hood exchange pleasantries'. (62). Yet such flimsy evidence has, for many researchers, justified Jahoda's recommendation that any History teaching in Primary schools should start with the comprehensible present and move backwards into the incomprehensible past (63). Observation of hundreds of Infant schoolchildren in their classrooms tends to support Donaldson's contention that 'the normal child comes to school with well-established skills as a thinker' (64). Chomsky's well-known assertion that 'comprehension precedes production' may be as applicable to time concepts as to language (65).

It is evident that we must turn to consider contributory factors and influences other than chronological and mental ages. These have indeed been raised in more recent research as questions only, very little certainty exists about which

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62. Partington G: op.cit. p.225.

63. Jahoda G: op.cit. p.102.

64. Donaldson M: op.cit. p.88.

65. Chomsky N: op.cit. cited by Donaldson: p.33.

circumstances most influence children's opportunities for success. Most suggestions are negative, isolating factors which do not appear to have been influential. Some researchers have expressed more interest in how and why children acquire concepts of time, rather than being primarily concerned with 'when'. There is some agreement on the general basic importance of maturation, chronological age and mental age as conditions of progression, though Peel points out that it is 'when mental age is substituted for chronological age that Piaget's claims about the ages corresponding to different levels of thinking are substantiated' (66). Piaget himself emphasised the dependence of formal thinking developing a stable form, at about fifteen, in a rich cultural environment'. Congdon came to the conclusion that 'a child's control over time sense seems to be related to experience and maturational features rather than to mere verbal expression' (67), but Case and Collinson believed that 'neither chronological nor mental age is more important than the other in the development of thought structures' (68). The latters' study emphasises the values of 'experience'; regression, they observe, tends to occur 'where experience, possibly verbal repertoire is lacking.' Henry also emphasised the essential contribution of verbal ability (69). Others have conjectured about the influence of emotional factors, other skills, particularly in mathematics, and the more nebulous influences of 'motivation' and 'attitudes'.

No part of this corpus of contradictory research is more at odds than the question of sexual difference. There are two totally opposed views. For Henry the sexual advantage of the

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66. Peel E.A: op.cit. p.95,98; also The Pupil's Thinking Oldbourne Press, London, 1960 pp.176-77.

67. Congdon P.J: op.cit. p.15.

68. Case D. and Collinson J.M: op.cit. p.105.

69. Henry K: op.cit. p.273.

boys in her sample 'continually emerges' (70) and should be further investigated. Coltham, Congdon and Rogers reinforce this view. It is mainly the Piagetian researchers, following Peel, who fail to discern a significant factor in sex. Hallam, citing Basset, Case and Collinson, Rae and Loughran, sums up the non-sexist case (71). The computerised study of more than 600 children over four full years in Dudley schools will throw some light on this controversial issue.

Some writers turn to socio-economic factors in family, neighbourhood and school. Jahoda drew attention to the educational effects of higher standards of living, the influences of television and the benefits of the welfare state, all tending to 'widen the horizons' of children (72). Congdon agreed that experience and social background are essential factors for concept development; he felt that 'the correlation between the child's early life and experience of his later development of historical concepts demands more research' (73). Hallam believed that the area in which his pupils lived 'may have exercised some limiting effect upon their thinking in History' (74). Friedman goes significantly further in looking to out-of-school experience; 'to a large extent', he asserts, 'the time concepts of the child develop independently of organized school instruction. When the child

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70. ibid: pp.274, 329

71. Hallam R.N: op.cit. p.184.

72. Jahoda G: op.cit. p.87.

73. Congdon P.J: op.cit. Conclusion no: 13. p.135.

74. Hallam. R.N: op.cit. p.196. 'Social factors would certainly seem to have a strong effect on logical thinking'.

starts school he already possesses a fund of ideas which develop steadily with maturity' (75). So we come, at last, to the educational crux of the matter: how significant is teaching and indeed the full 'zeitgeist' (76) of the school as a decisive factor in the development of time concepts? Moreover, can the influence of the school be separated from the nature of its neighbourhood, or compensate for the hardships of its pupils' families?

Piagetian research, possibly misinterpreted, nevertheless influential, tends to reinforce teachers' previously discredited beliefs in 'readiness' to learn, on the assumption that, as Case and Collinson insist, one stage of equilibrium must be fully experienced and consolidated before a next stage can be attained (77). Teaching must, apparently, wait upon the child's readiness to learn. Some important research, particularly that of Pistor, Vikainen, Congdon, Coltham, and, most recently, Partington, looks to the classroom and the teacher for progress to be made, and, in due course, to be accelerated by means of suitable, specialized curriculum. Vikainen concluded that 'focussing attention on chronology in school seems to develop schemes of time periods' (78). Jahoda is the most persistent critic of

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75. Kopple C. Friedman: Time Concepts of Elementary School Children. The Elementary School Journal. 1944. p.337.

76. Congdon P.J: op.cit. p.136. Conclusion no. 19. citing K. Lovell; A Follow-up study of Inhelder and Piaget's The Growth of Logical Thinking' British Journal of Psychology Vol. 52 p.143-153

77. Case D. and Collinson J.M: op.cit. p.109:- 'The importance of the successful completion of one stage of development in the development of the one to follow, as Professor Peel pointed out, cannot be overlooked and should be a prime consideration of the educationalist'.

78. Vikainen I: op.cit. p.17.

classroom possibilities, seeing increase in historical understanding as 'more a function of mental maturation, coupled with the widening of general experience than of purely formal teaching' (79). One is reminded that there are, in 1980 educational methods other than 'formal teaching' available to the child. Jahoda is equally negative regarding the value of language development as a condition of progress, reinforcing Vygotsky's warnings of premature use of 'verbal symbols' in lieu of true concepts (80). Vikainen was more positive; to her the results of her teaching experiment confirmed her 'assumption that teaching rather than intelligence plays the decisive role' (81). One certainly sees, throughout the course of the Dudley project, the indubitable influence of teachers in several 'good' schools on children of relatively low verbal and reading ability, from unsalubrious, though lively neighbourhoods. Lovell's concept of 'zeitgeist', the combination of the whole cultural and emotional environment of the classroom, the ethos of the school and its Head, and the relationships of pupils and teachers is a vital contribution to our understanding of children's opportunities to learn.

Thus, finally, we turn to those research studies which concern themselves with the possible methodology of the history teacher in the Primary school, other than those who assume that the child's acquisition of time concepts and reasoning ability must be a slower process than the devisers

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79. Jahoda G: op.cit. p.97.

80. See also Jahoda's reference to Godin A.S.J: The Historical Function Lumen Vitae XIV (1959) pp.245-265. Jahoda (op.cit. p.100, concludes: 'In other words, the learning of the appropriate terms precedes the child's grasp of time relationships, and is therefore an unsafe guide'.

81. Vikainen I: op.cit. p.10.

of curriculum appreciate. McNaughton (82) sums up this negative view in its most cautious form: 'the picture of the average child which Piaget's studies have created for us to this point is of a person who seems able neither to depart from the material relations before him, nor to consider possible explanations and hypotheses and test how far they are compatible with the material relations present. The implication for teachers is not to overestimate the degree of sense a child makes out of any social studies material that deals with relationships among people. It is not a very reassuring picture for those teachers who believe that dealing with relationships of this kind is a key process in social studies. Denied the opportunity to discuss them with children they could feel that there was no point in the primary school teacher doing much more than simply arousing interest in social studies topics and leaving the important considerations for secondary school level. Fortunately, a study of other as pects of Piaget's work offers some consolation to those primary school teachers who would like to take an active part in accelerating movement through the stages of mental development.....' Piaget and his followers, McNaughton concludes, 'have probably assembled enough data about children's thinking to convince primary school teachers that they should at least reconsider any assumptions that they may have about what is simple and what is difficult for children to understand in social studies. On the one hand there seems to be a need to discover the level at which individual children are thinking and to regulate the method and content of teaching accordingly. On the other hand there is some support in research for believing that careful selection of social studies material and questions about it might accelerate the development of thinking in this area of the curriculum.' Hallam's view of the younger child's

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82. A.H. McNaughton: Piaget's Theory and Primary School Social Studies. Educational Review Vol.19. (1966-7) pp.27 and 30.

capability envisages little possibility 'with history taught at a deeper level than that of factual description! Junior school children, he believes, 'operate mainly at intuitive and concrete levels. Even at the top of the junior school causation in history, if included, must necessarily be of an elementary and concrete nature. Teachers should avoid, as far as possible, abstract terms.' Blyth, on the other hand, warns us that 'if education does not impart some substantial rationality to children's thinking about time, place and society, then either the thinking will not be done at all, or it will be imposed from some tapestry woven of folk lore and ideology' (83).

Congdon believed that 'the principal methods of teaching history in the junior school need not be exclusive of the development of a sense of time' and advocated 'a flexible syllabus devised deliberately to use the best of all the various methods...the more experience we can provide of materials, reading and questioning at appropriate levels the better' (84). Yet, as he reminds us, there must be many other reasons for teaching history to juniors besides that of developing a time sense' (85). To Blyth the child's self-discovery is of central importance (86), to Donaldson, all learning must be seen in the context of the child's control over his own thinking, of his awareness of understanding (87).

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83. Professor W.A.L. Blyth: Discovering Time, Place and Society. Education 3-13. Vol. 1. October 1973. p.74.

84. Congdon P.J: op.cit. Conclusion no: 10 p.135.

85. ibid: p.10.

86. W.A.L. Blyth: op.cit. p.72:- 'Since children's self-discovery is of central importance, one obvious way in which they can and indeed must learn is through a purposeful extension of their own informal experience.'

87. Donaldson M: op.cit. p.123.

We turn to the creative work of gifted teachers like John Fines and Dorothy Heathcote (88), to musician-historians like Michael and Alison Bagenall, (89) for the enrichment of children's imagination and total empathy with the past, the wealth of stories and the possibilities of children's active participation in the living past. These are at least of equal importance with the capacity for inferential thought in the Primary years and certainly more important than the development of formal ideas of causation and moral judgement on adult misbehaviour.

Congdon's is the most thoughtful of these studies in looking to the future, as Vikainen's is the most positive. The former sums up the problem in schools: 'there still exists some confusion in the teaching of history and this is especially so at Primary level. Only when we have established our aims in teaching the subject, located the concepts we wish to develop and discovered the pattern of their development will we be able to ensure that the correct material and teaching methods are given to the children at the appropriate stage' (90). Vikainen leaves us with the simple question: 'What type of teaching is best suited to further the development of schemes of time periods? (91).

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88. Reviewed by Philip Dutton: History Handed Over. Unpublished Dissertation for the Degree of Master of Education of the University of Newcastle upon Tyne. 1980. passim. See also: Fines John and Verrier Raymond: The Drama of History. New University of Education 1974.

89. Bagenall Alison and Michael: This Merry Company: Medieval Music, Dance & Drama for Primary Schools. Oxford University Press, 1979.

90. Congdon P.J: op.cit. p.133.

91. Vikainen I: op.cit. p.17.

There has been some important endeavour, by scholars and teachers, during the past decade, to come to terms with at least some aspects of this fundamental pedagogical problem. In 1971, the significant lack perceived by Congdon (92), that no taxonomy existed for the subject, was effectively filled by Coltham and Fines's publication of 'Educational Objectives for the Study of History' (93). The authors set out a four-part structure in order to 'spell out the constituent parts which need attention in the learning of the discipline, and to bring out the relationships between those parts.' The four parts included paid attention to: Attitudes towards the study of History; the nature of the discipline: skills and abilities and the educational outcomes of its study. This survey deliberately avoided the framing of aims 'in relation to the information of history, especially in relation to secondary source material, since it is not possible, and is probably undesirable, to suggest that certain facts are the essential ones pertinent to the discipline.' Ten different skills were analysed, including vocabulary acquisition, reference skills, memorisation, comprehension, translation, analysis, extrapolation, synthesis, judgement and evaluation, and communication skills. Outcomes were seen to include insight, knowledge and values and reasoned judgement. There is in this framework no reference to concepts as such.

This and other attempts to analyse and identify the salient

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92. Congdon P.J: op.cit. p.137. Conclusion no.22: 'In vestigators have not established what the basic concepts of history are. There is a need for a taxonomy of the subject and this could well be a primary subject for research.'

93. Jeanette B. Coltham and John Fines: Educational Objectives for the Study of History. A suggested framework. Pamphlet no: TH 35. Historical Association. 1971.

aspects of any study of the past tend to pay a variety of attention to the relative importance of content, concepts, attitudes and skills. To different analysts the priorities are variable. Further attention has been paid, very recently, by Her Majesty's Inspectors, to the essential hierarchy and progression of essential skills and the attainment of other objectives in the study of history; these surveys have inevitably led to a consideration of possible assessment of any such progression. David Sylvester, H.M.I., for example, has published a recent report on 'Making Progress in History' (94). Reviewing a chronological age-span from twelve to eighteen, he sets out seven categories of skills. These are: Reference and information skills, skills in chronology, language, understanding evidence, synthesis, empathetic understanding and historiography (the last only from the age of 16 to 18). The expectation of the twelve-year-old is modest. As to chronology he is expected only to know a few simple words, such as 'generation, century and decade' and such terms as 'prehistory, medieval, ancient and modern'. He is allowed 'to make a simple time chart'. This ability apparently develops very little more by fourteen and from that age no further progress is defined. In relation to evidence, the twelve year-old should be able to define this idea 'in simple terms'. He can 'comprehend and make deductions about historical pictures, artefacts and simple documentary extracts. 'This skill develops slowly to the age of fourteen, by which time primary and secondary sources are distinguished, the possibility of bias is discernible and differences between 'facts, opinion and propoganda' can be distinguished. This is the only reference to any concept of

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94. David Sylvester H.M.I: Report: Making Progress in History. Teaching History No. 26. February 1980. p. 29.

authenticity of evidence.

Basically the same grid of references was appended as an annex to a discussion paper circulated at an Autumn Conference for Educational Advisers by Brian A. Chaplin H.M.I; this was entitled 'A suggested framework of skills and concepts in History 8-16 years' (95). The category columns are basically the same as David Sylvester's, with some further expansion (for example, 'synthesis' becomes 'syntheses and communication using basic concepts') and the starting-line is reduced to the age of 'by about 10'. Concepts envisaged include that of 'similarity or difference' and 'change' by ten, 'continuity, change and causation' by twelve and 'cause and effect' by fourteen. The base-line at ten years of age is a reasonably demanding one; the child is expected to be able to 'describe the main features of concrete evidence about the past (pictures, artefacts, buildings and simple documentary extracts) and, under the extended heading on 'chronology' - now 'skills in understanding time', the child is expected to have 'a growing awareness of differences in space and time (e.g. 'long ago' and 'within living memory'); he is now expected to begin his time-line, 'involving scale and sequence', two years earlier than in David Sylvester's list. In both of these valuable attempts to elucidate the possibilities of progression one is relatively well satisfied as to the nature and sequence of the various skills and appreciates that there has been no attempt to make hard-and-fast divisions between different age-groups. Nevertheless, one is left with the impression that the sequence begins too late in childhood and develops too slowly; there is a sense of under-expectation of the children's potential skills.

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95. Brian A. Chaplin H.M.I: Working Paper 2. Assessment in History. Annex: A Suggested Framework of Skills and Concepts in History 8-16 Years. Unpublished Typescript circulated at Department of Education and Science Conference for L.E.A. History Advisers. Course N 666 at Wentworth College, University of York. September 1980.

As to assessment, the D.E.S. working paper accepts that 'many of the elements of history which are regarded as of most value to pupils - those affecting their attitudes, beliefs and social operation - are extremely difficult, if not impossible, to test.....It is clear that practising teachers have had little opportunity to look critically at their existing range of individual tests items to see which assess concepts, skills and attitudes most effectively.....A much wider variety will need to be employed in the future to reflect the extent of provision within the subject and to help develop the whole potential of the pupil.'

The examples thus set by the Department of Education and Science have been followed in various Local Education Authorities, by the publication of internal 'guidelines' devised to define and monitor progression in children's development of historical concepts and skills. A typical example is set out in draft form by the East Sussex L.E.A. (96), as the result of the efforts of a working party of Primary and Secondary school teachers, who set out to investigate the nature of children's learning of history between the ages of seven and thirteen. An admirable list of initial objectives for the whole study includes: 'to show how to recognize and evaluate evidence of the past;....to give a perspective of time....and to....to develop an interest in cause and consequence. 'The list which follows on these objectives is entirely related to 'Skills', and is set out under four main heads: 'comprehension translation; synthesis, communication and vocabulary acquisition; memorization and 'analysis, evaluation and judgement.' Here again, the actual

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96. History 7-13: Draft Preamble Unpublished typescript produced by a working party of teachers based at Uckfield Teachers' Centre East Sussex from February 1980. Circulated at D.E.S. Conference N666.

content and sequence of developing skills is realistic, but the same sense of under-expectation pervades both the age-attributions and the marginal 'Remarks' added by the teachers. For example, the ability to 'formulate what is interesting, puzzling, about a piece of evidence or secondary material' is listed but not attributed to any part of the age-scale from seven to thirteen, because it is 'too difficult before the age of thirteen'. The ability 'to organize information' is not seen to develop before the age of 11-12 and that of posing and testing hypotheses 'Requires greater maturity' (i.e. than 13 years.) More devastating is the total renunciation of any intention to examine evidence in terms of its possible authenticity. The heading: 'Relate statements to evidence' draws a blank for the whole age-range, 'As history is concerned with facts, questioning the truth of statements is dangerous and insecure-making for the immature child'. The immaturity of the child is stressed again under a similarly blank heading in the 'Analysis' set. The list postulating the ability to 'use caution and admit doubts in interpreting material' is ruled as inadmissible from seven to thirteen because it is 'Dangerous to foster doubts in the immature child.' Otherwise 'A spirit of inquiry is to be developed.' The paper closes with a quotation from 'A View of the Curriculum': '....the identification of the skills and ideas associated with history that are suitable for primary school children should help teachers to ensure that the day-to-day programme is organized so that children become acquainted with these skills and ideas, and should help to improve continuity from one class or school to the next - whether or not the subject is shown separately on the timetable.'

The more fundamental question, other than that of the development of children's skills, is that of their similar development of concepts, particularly by means of a deliberate curriculum. This question has been mos thoroughly investigated and convincingly demonstrated by the two consecutive

Schools Council projects which have dealt with some aspects of children's studies of the past - the project on Place, Time and Society, 8-13 and the History, 13-16 Project. The former set out most deliberately to 'teach for concepts'; the latter, more concerned from its inception with content and skills, inevitably demonstrating its essential strategies for children's conceptual development as the project moved to evaluation.

In 'Teaching for Concepts', the essential philosophy of the History, Geography and Social Science Project 8-13 is clearly stated (97). This began with the assumption that children often bring to their learning of history stereotypes of many historical concepts which can be used as starting points in teaching about the past. Although these may 'lack the rich content derived from personal experience, the teacher can choose from a variety of resources....to enrich and refine the stereotype . We must preface our teaching for concepts by establishing what body of experience the children bring to each new situation. The evaluators of the project did indeed confirm that children had some knowledge of 'long ago', could use a variety of sources to develop their concepts and were able to transfer learning to new situations. They had difficulty in using chronological time, but understood sequence, having at their disposal 'a rough and ready chronology based on their own pattern of experience'. A major conclusion which the project team offered as essential for further classroom practice was the evident importance of children's peer-group discussions. 'The skills involved in discussion - particularly listening and replying - are worth developing, especially with less able pupils, because they help in concept development.....' (98)

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97. Elliott G: Teaching for Concepts. Place, Time and Society 8-13 History, Geography and Social Science. Schools Council Publications 1976 p.16.

98. Ibid pp.22-23.

In summing up the values and objectives of the project, Professor Blyth (99) offers a valuable re-definition of 'guided discovery', as a framework for purposeful learning rather than 'an orderless set of projects on the one hand, or .... an attempt to 'cover' a standard syllabus on the other! Again he reaffirms the project's intention to extend the children's informal experience with reference to specific objectives and well-defined key concepts. Otherwise, he warns, education may be seen 'to conceal reality rather than to explain it.' The project was devised to maintain an essential balance between concepts and skills. In formulating their final conclusions the project team were conscious of the inadequate background of sound research against which their work was set. Their work concludes with a list of useful pointers 'for others to do what the Team could not.' They discern a particular need for systematic studies of how children form and attain certain concepts in the social subjects; the nature of key concepts and their epistemological and psychological significance and of how children respond to a series of curricular innovations in the social subjects over the years between 5 and 18. They were concerned also about the processes by which curricular innovations are carried out in middle schools and the consequently necessary modifications in the teacher's role and in the organization of schools. (100).

The innovation of Middle Schools, both as those deemed Primary schools, aged 8-12, and those operating under Secondary school regulations, from 9-13, has been the cause of a

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99. Professor WAL. Blyth: Discovering Time, Place and Society. Education 3-13 Vol. 1. October 1973 p.69-74

100. Professor Alan Blyth et al.: Place, Time and Society 8-13 Curriculum Planning in History, Geography and Social Science Collins - ESL, Bristol, for the Schools Council. 1976 page 177.

considerable amount of curriculum development, in-service training and publication. Ross, Razzell and Badcock in reviewing the curriculum of the middle years re-emphasise that it is 'essential that concrete experiences given in History should be those which permit adequate conceptual development of things remote in time, mature judgement on evidence and...language to explain remote phenomena... Syllabus must be contrived to provide for the acquisition of skills and knowledge valuable not only for their intrinsic merit, but as a preparation for study of a more complex nature. The pupil is introduced to the discipline of history...through the study, evaluation and reconstruction of historical evidence and the development of contributing skills, so that he may establish a realistic picture of life in the past.....A study conducted in this manner requires certain skills - in interpretation, in research through reading, in descriptive writing and documentation and in the allied fields of enquiry through geography and mathematics. Above all, it calls for the ability to make an objective judgement, to form a conclusion and to recreate the past through imaginative experience.' The authors draw attention to the requirement of sophisticated techniques of enquiry and doubt the present competence of the middle school teacher to assemble adequate sources of primary material of the complex nature such studies require. (101).

Another view of the Middle school classroom practice, published by the Schools Council in 1977, asserted that 'to say that the basic concepts of a subject must be acquired before it can become active is misleading, to misunderstand the process.' The authors envisage the essential classroom organization as an operational approach - 'you learn to argue

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101. Ross A.M., Razzell A.G. and Badcock E.H: The Curriculum in the Middle Years. Schools Council Working Paper No. 55. Evans /Methuen Educational. 1975. Section VI. History. pages 103-114.

a case, solve a problem, write a poem or story by doing it...! this 'puts the pupil at the heart of the learning situation...the teacher creates the contexts for learning and is a crucial part of the learning environment, but is no longer the only source of wisdom.' (102)

The findings of the senior project in History are clarified by the original evaluator and ultimate director of the Project, Denis Shemilt. He concludes that children can learn best by solving problems and asserts that 'this process is likely to prove most productive when the problems presented are not those immanent in source and narrative, but those which emerge from the working out of the child's existing ideas in the context of historical problems arising from the prior application of those self-same ideas.' Children, he suggests, should be taught to look critically and constructively at their own ideas and explanations. (103) The values of the project are succinctly expressed by John Fines in his masterly introduction to the project's Evaluation Study. He sees its major contributions to History teaching very clearly: 'He (Denis Shemilt) has taught a generation of History teachers cowed by Piagetian analysis, that if we look carefully at what children are doing when they are thinking about History, then they seem to be performing much more hopefully than the Piagetians first thought. He has shown us that less able children can make measurable and indeed marked progress in History and enjoy doing so; he has shown us how badly we underestimate children as thinkers and learners. He brings us once more to the

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102. Margaret Mallett and Bernard Newsome: Talking, Writing and Learning 8-13. Schools Council Working Paper No. 59. Evans/Methuen Educational, 1977. pp.217 and 221.

103. Denis Shemilt: History 13-16. Evaluation Study Holmes McDougall, 1980. p.52.

beginning of all good history teaching by showing us that learning is essentially an active process. By his own brilliant interviewing he shows us that if we ask good questions and really listen we can actually hear children thinking and learning.'

Apart from the practical projects carried out nationwide, there have been at least three major individual works which consider the practical teaching implications of endeavouring to understand how children think and learn, with particular reference to their learning about the past. These are the writings of Coltham and Partington and, above all, of Margaret Donaldson. In 1971 Dr. Coltham published an Historical Association pamphlet on 'The Development of Thinking and the Learning of History' (104). She firmly asserts that the development of thinking is to a large extent a matter of learning, and that language is the enabling factor in learning. Having carefully reviewed the nature of Piagetian development stages, she turns to examine the means which promote that development. She identifies involvement and challenge as the most important motivating forces and emphasises the essential experience of 'social interaction' in learning situations: '....it is all too easy for adults receiving a child's explanation to assume that he is understanding at the same level as themselves and to fill in any missing links in a chain of reasoning as if they had been expressed, whereas they may well be absent. Faced with his peers, a child receives no such concessions and his attempts to communicate will be challenged, so forcing him to clarify his ideas and to seek the words and phrases which will convey

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104. Jeanette B. Coltham: The Development of Thinking and the Learning of History. Pamphlet TH34. Historical Association, 1971.

more exactly what he wants to say...? The teacher supplies the necessary concept-word after the children have arrived at the notion which the concept embodies.' Children are more often than not the best judges of who will make the best learning companions and teachers' fears that friends working together will lead to little work being done are proved groundless provided that the challenge is a real one and commensurate with the present abilities of the children, and that the action required of them does involve them and leads to verbal exchange' (105).

Dr. Coltham then turns to the possibilities of teacher action which can help to make learning effective. 'It is wise to consider how big a step a new idea is from those already developed and how these connect, how abstract the idea is and whether it needs preliminary examination at a concrete level, whether the learner has accepted the same goal as the teacher, and how best to make h im aware of his degree of success.' With particular reference to the more difficult problems of historical concepts and language, she explains that 'the way that teachers frame their questions can set limits to or extend children's thinking.....if questions probe so as to discover existing schemes and invite their enlargement, then adaptive behaviours are stimulated and opportunities presented for assimilation and accomodation.' The same source material can be used at different levels of age and thinking, younger children looking mainly at the 'outside' of events and the older at the 'inside'. 'But care has to be taken in using age as expressed in years as the sole guide. The question of ability is also relevant and this is more nearly expressed by mental ages....

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105. Ibid. p.28.

The younger the children both chronologically and mentally, the more is direct action on their part likely to arouse and maintain involvement. The task which requires them to examine objects, pictures, film-strips and so on, and to draw, model or act out what they find, is more suitable than that which requires several stages of action - extraction of information from several sources, its analysis and a final synthesis for example - before a product of some kind is possible. 'The need to challenge children is repeatedly postulated; new areas of study, new source material or different, unfamiliar approaches to familiar figures or situations, handling known material in an unfamiliar way.' Schemes of classification, comparison, sequencing, seriation and hierarchy are seen to be necessary to this study. Above all: 'Action on the teacher's part which will assist mastery of appropriate language is perhaps the most difficult, and probably the most important, area of the teaching/learning situation.' Dr. Coltham comes to the same conclusion reached by others whose work has been considered here.... '....children encouraged to verbalise what they have in experience relevant to the topic under study are those most likely to gain understanding' (106).

The most up-to-date contribution to this area of pedagogical research is the recently published book by Geoffrey Partington, 'The Idea of an Historical Education' (107). Most importantly, successive chapters deal with 'Why Teach History in Schools?', 'What History should we Teach?', 'The Organization of the Syllabus', 'The Skills of

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106. Ibid. p.41.

107. Geoffrey Partington: The Idea of an Historical Education. N.F.E.R. Publishing Co. 1980.

the History Teacher' and, unusually, a final chapter on the practicality of 'Teaching Time'. Partington's work is much more concerned with essential content than with the more fundamental requirements of skills and concepts, but his criteria are certainly those of the practising, thoughtful History teacher. He is primarily concerned with teaching the subject History in the Secondary school. Unfortunately, 'classroom activities' are seen as 'valuable aids to historical understanding' rather than as essential experiences. 'The great danger is that ends and means may become confused and that the purpose of history may be seen as the promotion of children's classroom activities rather than that these are seen as having educational value by their contribution to historical understanding or to other worthwhile forms of knowledge. It must be emphasised that the reason for teaching history is not that some interesting classroom activities may be generated, even though these may be essential to the success of the teaching.' Partington's study is, in fact, the most powerful, if not the only study to emphasise 'the nature of historical knowledge and its potential value'; he is the outstanding advocate of a content-centred approach to the problems of the history teacher. 'The principal shortcoming of most recent attempts to improve upon traditional justifications and practices in the teaching of history has been a neglect of the nature and characteristics of historical thinking and its relationship to education'. (108).

As in all his previous chapters Partington carefully reviews the state of research into children's acquisition of concepts of time; 'it is perhaps of special interest to us as teachers to consider whether mastery of time concepts can

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108. Ibid. page 33.

be increased by suitable learning experience.' His verdict is favourable, his solution limited to the secondary school: 'My suggestion is that the best way to increase mastery of time concepts in the secondary school is to teach a thorough and wider ranging unit of time concepts in Form 2.' (109). His view of the developmental levels indicated by research is admittedly 'pessimistic'; it is also limited in its selection of research findings. Nevertheless, Partington's suggestions for a 'teaching unit' specifically devised to teach chronology is eminently practical and wide-ranging. The suggestion that, in association with the teachers of physics, a history department could consider it 'quite feasible to extend such a project to some problems of space-time posed by post-Einsteinian quantum physics' is an intriguing and far-seeing development of chronological study (110).

We turn at last to Margaret Donaldson's sensitive chapter on 'What School Can Do' (111). More than all the studies previously studied, Donaldson's view is genuinely child-centred. She is concerned with content, concepts, attitudes and skills, but sees these as contributory to understanding, not as ends in themselves. Her view of the classroom curriculum, its activities and inter-relationships of teacher and taught is firmly based upon the ideas of children's discovery through experience. Children must be made profitably aware of their uncertainties and encouraged to 'learn to ask' about them. 'The essence of the teacher's art lies in deciding what help is needed in any given instance and how this help may best be offered; and it is

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109. Ibid. page 236.

110. Margaret Donaldson: Children's Minds Fontana/Collins 1978. Chapter 9 pages 96-109 passim.

clear that for this there can be no general formula.' She supports Vygotsky's view, that 'it is educationally more informative to know what a child can do 'with some assistance' than to know what he succeeds at unaided.' The sights of expectation are set high for the youngest school-children. The beginner, Donaldson believes, can and should be made aware of the complexities of each system he is required to master; to avoid or mask complexities at the outset is 'quite mistaken'. Similarly, 'there is no reason to suppose that children of five cannot understand a system that contains options.....Young children are not likely spontaneously to formulate hypotheses that specify alternatives - but that is another matter. All the more reason why, if the system they are dealing with does involve options, we should tell them so. They will then understand the sort of thing they have to learn.' Much of this section of her chapter is concerned with the system of reading, but her ultimate aim and application is that 'of encouraging reflective thought and awareness of the processes of the mind' (112).

It was on the basis of this and other research which emphasises discovery, challenge and high expectation of young children that the premises of the Dudley project on children's awareness of past historical time were firmly based. 'If pupil understanding is not present at early levels of maturity it is futile to study the past too early in the life of the child. On the other hand if time concepts are acquired only through a certain type of instruction in history and chronology, then the school should provide it' (113).

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112. Ibid. page 106.

113. Pistor, Frederick: op.cit. p.293

CHAPTER THREE:

THE ORGANIZATION AND ADMINISTRATION OF THE PROJECT. 1976-1980

In order to recruit an adequate sample of schools and their pupils, the questionnaire previously quoted (pages 17-20) was first sent to all Dudley Primary and Middle schools, during the Summer term of 1976. The results of the questionnaire made it evident that there would be a considerable degree of goodwill towards a project of the type described in Chapter One. (pp.36-37) It was hoped to raise a dozen Pilot schools and an equal number of Control schools, each group offering a sample of about 600 pupils of the required age-group. The Pilot schools would be asked to follow a prescribed curriculum, and, in the course of it, take a series of regular tests. The Control group would follow its normal curricular devices, but would take all necessary tests at the same time as the Pilot group.

A meeting was held at the Stourbridge Teachers' Centre in June, 1976, in order to discuss a project to begin in the following academic year. It was intended that commitment to this project should be entirely voluntary, so that any form of selection of schools for particular reasons must be a secondary consideration. It was clearly explained that the project formed the basis of a degree course of research at Keele University for the director of the project, as well as being intended to benefit the children in the voluntary schools. As a result 30 schools volunteered to participate, 15 as Pilot schools and 15 as Control schools. This provided a sample of 695 pilot pupils and 657 control children.

The majority of the pilot schools, nine in all, were 5-12 year-old Primary schools in 'old' Dudley itself; two were Stourbridge 7-11 year-old Junior schools, one of which (EE) was, during the second year of the project, amalgamated with the neighbouring Infant school to become a 5-11 Primary school; this reorganization had no effect upon the project sample in the school, who were already 8+. In addition, two willing volunteers were accepted from the Halesowen 5-9 year-old Primary range (Schools EY and FY) in spite of inevitable future problems of continuity with their large 9-13 year-old Middle school. There was also an exceptional 5-8 Dudley First school (AA), offering a sample of 89 children, who would also change schools in the second year of the project: in spite of the inevitable inconvenience involved, this First school was invited to join, so that, at a later date, one of the larger separate 8-12 year-old Middle schools which was interested could take its part. Otherwise, the project tended to exclude volunteers from the 8-12 schools, because of the start at 7+. The last, different, type of school included was a small 5-11 'village' - suburb Primary school in Stourbridge (SS).

Selection of the control group and its necessary 'match' was to some extent limited by the remaining availability of suitable schools in similar age-ranges and socio-economic areas. In the event, thanks to the over-subscription of volunteers, it was possible to make a reasonably sound matching of the two groups, with only one or two unavoidable anomalies. The control group finally included ten 5-12 year-old Primary schools, four 5-11 Primary schools, and one (JJ) First school of 5-8 years old, to match the pilot group's Infant member. Unfortunately, there was no remaining 7-11 year old Junior school wishing to take part in the project. Nevertheless, the types of school, their relative sizes, their backgrounds and their general levels of relative academic achievement were seen to be broadly similar from group to group. Fortunately, 22 of the whole group had taken part in the preliminary 'base-line' tests (See pages 31 - 36) with children at 10+ in July 1976, so that some comparative records were already available. Otherwise, as the LEA's policy is not to set standardised tests of reading ability or verbal reasoning as early as 7-8 years of age, the

sample could not be easily tested at the outset. It was, however, intended to take standardised group tests at the half-way mark in the Summer of 1978, so that these could be recorded on computer, and to take a final pair of similar tests, of a random sample of 100 of the pilot population in July 1980. All group tests of reading and verbal reasoning were organized and carried out by the LEA's Remedial service; the tests used in each case, for the appropriate ages, were

Neale's Analysis of Reading Ability, the Hart-Davis Educational Graded Test (12) of Reading Experience, Hodder and Stoughton's Non-Readers' Intelligence Test and an English Picture Vocabulary Test by Educational Evaluation Enterprises.

The socio-economic grading of the schools was at first carried out on an unspecialized basis by the Head-teachers by means of responses to a questionnaire which offered its own definitions of: (1) Old village community predominant; (2) Modern Housing estate, predominantly socially mobile 'young marrieds'; (3) Council house estates with little social advantage; (4) Down-town inner ring urban schools in twilight or deprived areas and (5) Stable middle class, professional, 'middle-aged' residential housing. This initial grading was seen to be only a rough-and-ready guide, a relatively crude indicator of the main features of the schools' neighbourhoods and parent population. Towards the end of the project a more exact sociological definition was attempted by reference to the area statistics based upon the last census and other data available from the local Planning Department of the Authority. In any case, assessment of the socio-economic background of individual children was separately measured with the aid of Head-teachers and by reference to the Registrar General's Tables of Classification of Occupations (H.M.S.O. 1970).

Thus a more exact analysis of the socio-economic and intellectual advantages of both schools and pupils is possible in Chapter Seven. At the outset it was immediately possible to describe the sample as follows, in Table II. The nature of the initial sample was also fully examined in a working paper dated January 1977. (35)

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7. The Child's Awareness of the Past. Work with the Pilot Schools: First Term, Autumn 1976. Dudley L.E.A. Project Working Paper, January, 1977, passim.

Fig. 7: TABLE II Description of Pilot and Control Schools at the outset of the project in 1976.

COMPARISON OF SCHOOLS AND NEIGHBOURHOOD

PILOT SCHOOLS						CONTROL SCHOOLS					
FINAL RANK ORDER	SCHOOL CODE	No: PUPILS (1976)	N/HOOD RATING	SCHOOL RATING	TYPE OF AREA	FINAL RANK ORDER	SCHOOL CODE	No: PUPILS (1976)	N/HOOD RATING	SCHOOL RATING	TYPE OF AREA
4=	SS	35	10	7	Affluent Suburb	18=	JJ	62	10	9	Affluent Suburb
4=	AA	89	10	7	Affluent Suburb	18=	KL	35	10	8	Affluent Suburb
4=	BB	32	8	6	Suburb/ estate	26=	GY	40	7	7	Suburb/ estate
4=	EE	33	8	7	Suburb/ estate	14	MN	33	7	7	Suburb/ estate
1	NN	100	6	7	Suburb/ estate	22=	CD	53	7	6	Suburb/ estate
						22=	IY	42	6	7	Suburb/ estate
	(average rating).....					.....					
						18=	HY	24	5	7	Suburb/ estate
10=	P	92	4	7	Artisan urban	22=	QQ	46	5	5	Artisan /urban
2=	J	24	4	6	village	26=	OV	43	4	8	Suburb/ village
10=	XX	66	4	6	Artisan urban	10=	JY	21	5	3	Artisan /urban
15	YY	71	4	4	Council estate/ village	26=	AZ	54	5	4	Council estate/ village
15=	VV	32	4	5	Artisan/ village	30	YZ	66	4	3	Council estate
8=	ST	32	3	6	Council estate/ village	15=	IJ	41	3	6	Suburb/ village
1 =	RR	36	3	6	village	29	PP	62	3	5	Suburb/ village
18	EF	30	3	4	innertown twilight zone						
2=	DD	27	2	6	Artisan/ urban						
TOTAL		699 Avge:5		6		TOTAL		622 Avge 6		6	

* See Fig. 44 Table XXXI on page 278 for final rank order on average of all tests.

The voluntary schools remained very persistent and enthusiastic for the project despite considerable internal changes. During the full course of the four-year study, only one school (Control school 00) asked to withdraw, at the beginning of the fourth year; the school was in fact experiencing considerable internal difficulty. There was a remarkable and continuous internal reduction of the numbers of the sample over the full term, due to family mobility, schools' reorganization, regrouping of classes and year groups due to staffing reductions or changes in school policy regarding age-and-ability sets and new Headship. The numbers of the original populations in 1976 who survived year by year in the same class to continue the project were as follows:-

Fig: 8 : Loss of Sample Numbers, 1976-1980 (Pilot Group only)

Autumn 1976	%	Autumn 1977	%	Autumn 1978	%	Autumn 1979	%	July 1980	%
782	100%	719	92%	700	90%	674	86%	646	83%

It was evident throughout the project that some schools were more stable than others, whether for social and environmental reasons, or as a result of LEA or school policy and thus 'internal' mobility. The index of the relative 'mobility factor' is taken into account in making an overall 'school assessment' as one of the possible factors conducive to above- or below- average performance by schools or individual pupils in Chapter Seven. This factor of instability as a potential effect upon schools' planning and performance was certainly one of the more significant elements of the project, one which must influence our future thinking on continuity in any form of Primary school curriculum.

Nevertheless, thanks to an adequate original population, most of the children and almost all the classes committed to the project in 1976 completed the full course in 1980. Four pilot schools changed Headmasters (OP, XX, YY and BB), and another (OJ) tragically died. Fortunately for the project each new Head continued the work with interest.

Three control schools also changed Heads (AZ, QQ and JJ), that is 8 of the 30 original Headteacher volunteers (27%) were unable to see the project through. Another three Heads (SS, VV and GY) suffered quite long periods of serious illness or disability during the course of the project. In all, by the normal process of year by year class promotion, 172 Heads and teachers taught the project year by year; twelve teachers who were involved in the project moved to other schools during its duration.

The two Infant schools' children (AA and JJ), one Pilot and one Control, moved up to their Middle schools in 1977; unfortunately in the Pilot school's case (AA), the original year-group was split over two years' transfer, so that a third class was 'lost' on its belated promotion in the beginning of 1978. (The Middle school did not feel that it could begin again with a single 'behindhand' class in a year other than the main body of the sample). Thus it will be noted that during the year 1977-78 the schools' score tables will show two Pilot schools AA, both Infant and Middle school classes. The Control group's First school (JJ) lost fewer than a dozen pupils from the sample on transfer.

The two Halesowen Primary Schools (EY and FY) transferred all their classes to their 9-13 Middle school in 1978 and the two schools' samples amalgamated into school YY. Fortunately, the new Head of School YY, previously participating in the project at Pilot school BB, undertook to extend the project to all the six classes in his intake, so that none of the original Primary school sample was lost. (The additional children also took all subsequent tests, but only those of the original EY and FY sample were returned for marking.) This amalgamation reduced the number of pilot schools to 14. Fortuitously, in the final year the control group's number of schools also reduced to 14 by the withdrawal of school OO.

The project director was in an advantageous position vis-à-vis all the schools involved. During the full course of the project he was able not only to make regular weekly visits to observe classes being taught and/or group-work taking place and to offer advice, but was also able, at short notice, to teach classes himself, occasionally to set the due test, or follow up the individual testing of previous absentees, in order to help the class teachers. Thus it was an easy matter to observe difficulties, to perceive children's reactions and to carry out follow-up discussion on these and other matters, with both teachers and children.

The pilot schools were also invited to regular meetings, usually one in each half-term. There, objectives and methods were discussed, new tests distributed, new teaching materials demonstrated and necessary modifications worked out. Regular Newsletters were also sent to Pilot and Control schools, more than 30 in all. These ranged from short regular score-sheets and notes on each completed test, showing comparisons of Pilot, Control and individual schools' scores to substantial Teachers' Guides. Complete confidentiality was maintained by use of code letters, so that results were never attributed to schools by name; this appeared to be appreciated. In most cases each Headteacher attended every in-service meeting accompanied by one or more class teachers. The enthusiasm of individual Heads for the project throughout its course was a considerable influence on the project's continuing success. Attendance at these meetings was very full in all twelve terms; there was indeed a general sense of élan and purposefulness about the schools' commitment which was constantly reassuring.

Several of the Newsletters were large-scale Curriculum Bulletins or sets of complete teaching materials. Newsletter 18, for example (36), provided a complete outline of a series of key lessons to accompany a set of 30 coloured transparencies, also provided, explaining: 'What is a Document?'. This guide introduced a new departure into documentary study in the

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36. The Study of Documents Children's Awareness of the Past Project Newsletter No: 18. Dudley Teachers' Centre 1979

fourth and final year of the project. Similarly an Index (37) to the collection of 200 coloured transparencies, with its introduction to the uses of those pictures, their thematic groupings and the comprehensive bibliography of the pictures' sources from books, museums and art galleries, was a substantial teacher's aid. Other subjects dealt with in depth by Newsletters were: 'How do we know that a thing is old?' (38), 'Children's mathematical abilities related to the project' (39), 'An analysis of children's reasoning about the authenticity of documents' (40), four workbooks, each about 50 of the slides (41), and two sets of printed documents (42) all with explanatory introductions and explicit contents lists.

At the preliminary meetings of the Pilot school Heads in July 1976 a suggested outline for a possible scheme of project studies was distributed for discussion. The diagrammatic summary of that scheme is given in Appendix V This approach was generally acceptable to the schools, in that it incorporated a great deal of current good practice, but reservations were expressed about the amount of time available for all the possible ramification of concentric studies, incorporating many new and specific exercises. One sensed too that there was, particularly amongst individual

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37. West John: Collection of Coloured Slides 1-200: Index Dudley Teachers' Centre Resources Bank Item No: 5727 June 1979.

38. Discussion exercise for Pilot schools: How can we tell that an object is old? Children's Awareness of the Past Project, Newsletter No: 3 (November 1976) and Newsletter No: 6 (June 1977)

39. Newsletter No: 8 (September 1977).

40. Document Test 3: Analysis of Children's Reasoning Children's Awareness of the Past Project Newsletter No: 24. Dudley Teachers' Centre. February 1980.

41. West John: Children's Awareness of the Past Project: Picture Workbooks 1-4 Dudley Teachers' Centre Resources Bank Item No: 5390 (1978-1979)

42. West John: The Study of Documents Workbook 1 (Documents 1-25) and Workbook 2 (Documents 26-50) Dudley Teachers' Centre Resources Bank Item No: 5443 (1979-1980)

class teachers, a reluctance to abandon all other forms of study of the past, more particularly specific patch periods and favourite topics, in order to gain the fullest possible time for the project. Nor, at the outset, was the general experience of the schools' readiness to integrate highly specialized skills and content into mathematics and English time entirely favourable. The 'background' scheme was in fact accepted more as a possible general outline than as a solid basis of studies. Moreover, in the event it was in any case to be more subverted by the persistent nature of the regular tests; thus there was always a danger in any school that 'the Project' became equated, not with 'the Scheme', but with 'the Tests'. Nevertheless a great deal of additional work went on, week by week, on the stories, the pictures, the museum objects and the documents.

The outline of the project, year by year, was as follows:- In the first year 1976-77, museum objects and stories were introduced to the children for discussion in weekly groups. A time-chart was introduced into each classroom and all stories and artefacts were related to it. Considerable ingenuity was demonstrated in the maximum use of the classroom walls and corridor space for time-lines which were sometimes shared by classes in adjoining rooms. From the outset, the children were aware of the great problems of incorporating both immense distances of geological time on the same walls as recent centuries, ('We should need to go right out across the playground Miss...'; 'No, down to street'; 'Right down into Dudley', 'Across the Sea'). Some teachers were prepared to experiment and adopt pupils' suggestions, as to spirals, circles, 'time-areas' and 'expanding series' of differently scaled lines. In principle, at the earliest stages the teachers were discouraged from setting up rigidly, equally divided and numerically measured time-lines; many found this impossible to accept, though those who saw the point adopted remarkable flexibility by the uses of strings, curtain rings, clothes pegs and other forms of 'adjustors'. At its best the time chart was a continuing source of argument amongst the children. The idea of scale on the time chart was not fully discussed with the children, in mathematical terms until the fourth and final year.

For use during this year and the next schools were issued with an Anthology of 100 stories selected by the project organizer and incorporating any stories offered by individual teachers. With this book were also issued sets of 62 laminated prompt or cue-cards to promote the children's discussions. There was also a museum loan collection of 81 ancient objects for sharing round the schools. (See the list of items in Appendix V). From the outset of this course we were deeply indebted to the Birmingham Museum Educational Loan service and its director, Mrs. Meredith, and the Worcester Museum for their kindness in loaning many otherwise unobtainable objects and renewing some of these year by year. Individual children and teachers also contributed useful finds to their school collections and the classroom museum, already commonplace in most Dudley Primary schools, became an outstanding feature of the Pilot classrooms. For use with these objects, another set of prompt-cards was issued to stimulate discussions groups.

During this year the children were tested by two further 'base-line' tests and the mathematical and verbal tests earlier devised for an older age group. These results were computerised, as was all other available data on the individual children. The main set of tests, however, which was set from November 1976 to June 1978, was a series of six seriation picture tests. These tests and their outcome are described in Chapter 4. During the second year of the project (1977-78) the study of stories and museum objects continued and the first set of 50 colour transparencies was introduced into each class. During the next two years this collection grew to 200 pictures to which were added a set of printed workbooks. In June 1978 the first of a series of ten picture-authenticity tests was set to assess its feasibility. As a result of its favourable reception, the series of tests continued throughout the third and fourth years of the project (1978-1980). By means of the picture collection and tests the question of authenticity, time-placing and contemporaneity of narrative history pictures and other descriptive picture-sources was thoroughly taught and regularly tested. At the end of the third year (July 1979) a penultimate seriation test card was also set.

During the final year of the project (1979-80) the concepts of authenticity and contemporaneity were directed towards the evidence of printed documents, archives and other written records. The subject of 'documents' was thoroughly introduced to the teacher and the children at the end of the third year, in July 1979, by means of a written guide-book which accompanied a special set of 30 coloured slides (43). The teacher's guide was virtually a script for a series of at least four major lessons, each to be illustrated by slides which reproduced essential documents as illustrations. The idea was introduced to the children that the term 'documents' could incorporate all the many kinds of firsthand evidence which they had encountered during the past three years, that is, tangible objects, even historical sites, stories and other narratives, pictures of all sorts and, finally, written archives in manuscript or printed versions. The idea of 'primary' and 'secondary' evidence was also thoroughly introduced and the key lessons concluded with several testing exercises somewhat similar to the 'detective' exercise which introduces the Schools' Council teaching material for 'What is History' (44). The guidebook was immediately followed into schools by a printed set of 50 paper documents in the form of two sets of booklets; these were allocated one per pilot child in the fourth year classes. After the first term's introductory work, at the class teacher's urgent request, a matching set of 50 worksheets was issued to each school as the basis of children's individual study and analysis of the archives. This was produced, by the project director, with some reluctance based on a personal prejudice, even a sense of dissatisfaction with the larger set of workbooks required for the set of 200 coloured slides. One cannot escape the conclusion that slavish dependence upon this type of comprehensive sheet of questions, however imaginatively conceived, must displace a considerable amount of more essential pragmatic scrutiny and group discussion of the documents themselves.

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43. Newsletter 18 (op. cit.)

44. What is History? Schools Council History 13-16 Project. Holmes McDougall. 1976.

Unfortunately most teachers and all commercial publishers see more virtue in the readily recognizable workbook and have more confidence in its outcome in terms of written answers, ticks and multiple choice answers than in the more difficult monitoring of children's more spontaneous observation and deduction. The documentary tests taken in the fourth year of the project may, however, indicate that as at the outset, those powers are still more potent that the child's still inadequate grasp of the printed words. The familiar picture test-paper format (see Appendix III) was carefully extended in order to apply to printed documents and a series of six tests was taken on 20 documents in all during 1979-80. During the same year, the final three slide tests were taken alongside the documentary tests and a final seriation card was returned in May 1980.

Finally, in the last term of the fourth year, the original 'base-line' picture tests on continuity (The Bayeux Tapestry and 'The Growth of a Town'), the vocabulary test and the 'Long Age' essay (see pages 31-35) were set to the pilot group only, for comparison with the tests taken by the same 10+ age group in June 1976. The random sample of 100 children were also set standardised reading and verbal reasoning tests for the final correlation of all influential factors. Thus, by the end of the course 658 children in the pilot group and 533 survivors of the original control group had successively taken, as tests, 8 seriation cards, 30 slides in 10 authenticity tests and 20 documents in 6 separate tests. The pilot group had also undergone one, and in 100 cases, two standardised reading tests and verbal reasoning tests; three arithmetical tests, a verbal ability test, a vocabulary test and a 'visual perspective' test, two 'continuity' picture tests and a written essay. Facsimiles of all test papers, in their consecutive order, are included as Appendix I. All test papers were duplicated, circulated and collected by the Teachers' Centre at Himley Hall, which was the usual venue for all in-service meetings and courses. I am deeply indebted to the Warden of the Centre, and his Deputy Miss M. Smith; the latter very proficiently designed and printed all the early seriation picture tests. Each transparency and document test was accompanied by a trial example with an explanatory marking

scheme. Teachers were invited, prior to the test proper, to set, explain and mark the trial with their classes. Thus the vocabulary and conventions of each test paper were repeatedly made plain to every child. Each test paper was revised and amended in its early stages by the advice of the teachers' regular in-service meetings. Thus all question papers were devised with the full co-operation and consent of the children's teachers.

All tests were marked single-handed by the project director, with the sole exception of the final 'Long Ago' essay written in the final term. For this a team of voluntary project teachers was raised. Usually tests set and collected in the course of one half-term were returned, marked, with explanatory notes and marking schemes, during the following half-term. In the course of marking the very exhaustive documentary test-paper the schools began to experience some delay in the returning of marked papers, from term to term, rather than from half- to half-term.

The control schools returned the same basic tests, (apart,that is,from the various 'base-line' tests which were set to provide individual data on pilot school children) and were sent their marks in the same way. To save postage or delivery duties, each score-letter offered the return of the control classes' children's test papers only if specially requested; on no occasion was this requested, but all control tests were regularly completed with evident goodwill and despatch. The individual marks of the pilot children only were registered by name and kept from year to year, for annual storage on the Borough computer. Both control and pilot scores were, however, kept on a 'line-by-line' basis, so that the class score-sheets in both groups demonstrated every child's individual scores, question by question, though unnamed child by child. This enabled individual questions and answers to be counted exactly throughout all the tests, for both pilot and control groups. Only for the pilot group, however, could any named results be retrieved from the computer.

As to the curriculum, this was evidently applied loosely in some pilot schools. An undertaking was given at the outset that there would be no direct interference with the individual teacher's methodology and choices. Indeed, a great deal of structure were offered with the esential teaching materials; prompt-cards, work-books and time-line. Advice and demonstration was readily available, if required, but it was probably a strength of this project that no teacher was expected to change his/her normal classroom routine at all drastically to accommodate it. The project, it was hoped, would be accommodated into the normal ongoing programme of the average Primary school classroom, taking its place as a recognizable complement to ongoing work in English, topic, religious education and mathematics.

Finally, the only other recommendation made to the pilot schools as to their development of the project dealt with the time to be allocated, week by week to the work, bearing in mind that the tests themselves could impose two or three weeks' quota of work in any half-term, given the trial exposition, the test itself and the revision of the returned scripts. Teachers were, inevitably, concerned at the outset as to how much time the project might demand of them. The requirement was defined as flexibly as possible and, once again, this seemed to reassure the schools, reaffirming their commitment. Briefly, the advice offered was: to set aside an absolute minimum of 45 minutes a week, below which it was held to be pointless to continue the project, or an absolute maximum of 2½ hours a week - an average of 30 minutes a day, including full afternoons' craft or topic work. This time, it was stressed, could be blocked in the case of craft work or picture-viewing, or spread across normal English or topic lessons. It was thoroughly recommended that the project materials and methods should be integrated as much as possible with other normal lessons and activities, rather than unduly isolated. Most teachers tended to agree, more enthusiastically, that a great deal of project work could very easily be expended and developed in connection with normal 'English' lessons than in any other kind of activity. The project was always most readily accepted as a 'language' study by the teachers.

During the penultimate year of the project, there were two additional, sidelong developments. Firstly, a local Curriculum Development Group of three First schools, three Middle schools and their Secondary school, which had strongly supported both the Schools' Council History 13-16 Project and our own idea, asked to be provided with the basic teaching materials in order to begin work on the project. The Secondary school certainly saw the Awareness project in the Primary schools as a useful preparation for the Schools Council project at 13+. Somewhat reluctantly, in view of the amount of extra production and distribution involved for the Teachers' Centre, their enthusiasm was satisfied. Demonstration lessons now continue in this group, from school to school and their teachers also attend the Pilot group's in-service meetings. Their development of the curriculum is seen to be far less inhibited without the overbearing test programme of the pilot schools.

Secondly, as part of the LEA's Gifted Child programme of enrichment courses and out-of-school activities, a group of twenty children selected from the best performers in the Primary schools, as indicated by the first computer results, have attended Saturday morning additional sessions at a local classroom-centre especially opened and equipped for this work. This Unit is now staffed by MSC clerical help and two part-time teachers provided by the Education Committee. Both these additional developments, whilst adding to the central work of the project, have provided interesting sidelong views of developments which can take place from the most successful aspects of the project itself.

At the end of the second year (July 1978) the assistance of the Borough's Computer Division was enlisted to process the annual results of each child tested throughout the year. Three print-outs now record each child's marks for the tests taken during 1976-78, 1979 and 1980, with an average for the four years' work. This, with the initial data on each child's basic ability, provides a valuable survey of the children's progress which can be correlated with other factors such as the socio-economic background of the school and its general ability to enhance the children's potential.
(See Chapter Seven)

To summarise, the project was developed along the following lines:-

1974:	Feasibility Test:	three groups of different ages, participating in discussions.
1975:	Baseline Tests:	4,000 children of the 10+ age-group
1976-77:	Year 1 of Project:	Stories, Museum objects and Timeline. Seriation Tests (*recognition and Sequence*)
1977-78:	Year 2 of Project:	Stories, Museum objects and slides. Seriation Tests; first Picture slide test, Authenticity and Time
1978-79:	Year 3 of Project:	Stories, Museum Objects and Pictures. Picture-slide tests, Authenticity and Time.
1979-80:	Year 4 of Project:	Stories, Museum objects, Pictures and Documents. Final seriation tests, slide tests 8-10. Document tests 1-5. Final 'base-line' tests.

The essence of the project is the concept of evidence and the children's potential grasp of that concept. To that end, all the materials used, whether artefact, picture, story or archive, have been chosen, primarily, for their content of evidence. On all the given types of evidence, the two main lines of approach have been, firstly, the possibility of the children appreciating its authenticity, or, at the very least, recognizing what it was; secondly, their estimate of the place in time of that piece of evidence. Their relative individual and group ability to master those ideas and to explain them is the subject of this thesis.

CHAPTER FOUR:

THE SERIATION TESTS, 1976-1978

It is a commonplace to equate a sense of historical time with the ability to place events in a chronological sequence. In Coltham's view, seriation plus duration 'leads to a true concept of time'. She fails to discern this combination before the mental age of sixteen-plus. (1) Many adults confess a disability in 'never remembering whether the Saxons came before the Romans, or the Normans after the Vikings'. Helen Madeley, in her introduction to 'Time Charts', commented: 'A very brilliant woman once told me that she hated History because you had to keep remembering that fourteenth century really meant thirteen-hundred and something'. (2) There has been continuous investigation of children's ability to make a series of successive events in the body of research since 1925. It was in that year that both Jean Piaget and Mary Sturt published major works on the nature of young children's conception of time, and investigated their ability to perceive a sequence of events. (3)

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1. Coltham J: Junior School Children's understanding of some terms commonly used in the teaching of History. Unpublished Ph.D. thesis of Manchester University, 1960, page 87.
2. Madeley Helen M: Time Charts. Pamphlet No: 50 of The Historical Association, 1920, reprinted to 1954, page 1.
3. Piaget Jean: The Child's Conception of Time. Routledge and Kegan Paul, 1925-1969.
   Sturt Mary: The Psychology of Time. Kegan Paul, Trubner and Trench, 1925.
   Earlier studies included those of: Binet A and Simon T: The Development of Intelligence in Children. Baltimore, Williams and Wilkins, 1916 pages 206-7 and Decroly and Degan J.: op.cit.

   These studies were carried out with children aged 6-10 and 5 years of age.

From that early date to the present day, research findings have been concerned with two aspects of seriation. Psychologists, mainly concerned with children aged between five and eight, have endeavoured to establish 'the construction of quantitive time' and the stages involved in the child's understanding of 'qualitative physical time'. (4) Experimenting with successions of momentary events: photographs of a falling body at various stages of its descent; the relative fall and rise of levels of liquid in two linked flasks, or the running out of a sand-glass, Piaget recorded four and five-year old children's verbal explanation of the sequence of events, with particular reference to the problems of simultaneity, duration and causality. Anecdotal in form, the accounts of confusing questions posed to children in language which is occasionally ambiguous, tend to the repetitive conclusion that, in their first stage of development, children of four to five years of age, who rely upon 'direct intuition', have 'as little true understanding of duration as they have of the order of events.' (5)

It is not until the child attains the age of about nine years that he is able to postulate a systematic solution to any of the problems posed. 'What, in effect,' asks Piaget, 'is causality, if not the co-ordination in time-space of notions of which time is one dimension?' (6) Successive interpreters and exponents of the Piagetian concept of time elaborate this line of approach to include longer-term sequences, for example, annual phases of an apple tree's growth, or, as in the case of Piaget's own work, the relative ages of dogs, stones, horses, grandmothers and other people.

Much similar research has been carried out by mathematicians, who have investigated the evolution of number concepts and related tests of ordination and seriation to the

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4. Piaget Jean: op.cit. page 173.
5. Ibid: pp. 35 and 43.
6. Ibid: page 6.

ordered sizes of objects, and thus to stages of spatial and temporal understanding. (7) Most of those studies endeavour to match their findings, if possible, with Piaget's sequence of phases. All are concerned with seriation as an aspect of a child's ability to conserve apparently variable elements of number, space and time; time is seen to be analogous to space and number. None of these researchers appears to rate the second Piagetian stage, that of concrete operational interpretation very highly, perceiving it only as a phase of transition towards formal thinking. These negative views, of psychologist and mathematician alike, are linked in their interpretation with those of the second group of pedagogical researchers by the conclusion of Mary Sturt, that: 'chronological order is not grasped by most children under eight.' (8)

The second group of investigators are those psychologists and teachers who have adopted a pedagogical approach to seriation, and thus, usually, have referred children to long-term sequences of events in time, often historical in origin. Inevitably, this approach depends upon an element of general knowledge and thus tends to involve children of Primary school age. At its most practical level, this school of thought has been developed in successive manuals, surveys and reports published for the guidance of teachers, which relied, indirectly, upon the findings of research available at the times of publication. (9)

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7. Dodwell P.C: Evolution of Number Concepts in the Child in Mathematics Teaching No: 5, November 1957, and: Spatial Concepts of the Child in Mathematics Teaching No: 9, April 1959.
8. Sturt Mary: op.cit. page 43.
9. e.g. Report of the Consultative Committee on Primary Schools. (The Hadow Report) Board of Education, H.M.S.O. 1931, page 40:- 'Our psychological witnesses accordingly urged that up to the age of eleven the school subjects and their presentation should be kept closely related to the children's concrete knowledge and immediate experience.' and, page 41: 'The results of recent investigations indicate that the working contents of the average child's mind on entering the Primary school are likely to be far more limited than most teachers assume.' (This is certainly no longer true in 1980.)

Pedagogical investigation begins earlier than Piaget and Sturt's seminal volumes, with the publication, in 1922, of Oakden and Sturt's study of the development of time in young children, from which much recent research still springs. (10) Their series of tests has influenced many subsequent studies and has in fact been replicated by successive generations of exponents in much the same way that Piaget's disciples have interpreted and tested his stages. Their conclusions are, in the long run, more optimistic, except insofar as difficulties were created for children by the use of difficult verbal and numerical questions.

Oakden and Sturt emphasised that their aim, 'The following investigation into children's knowledge of conventional time is mainly educational ..... bearing on (a) the methods of history teaching and, (b) the age at which certain aspects of it could most profitably be begun.' Among five objectives we find: 'an investigation into ..... (iii) the child's knowledge of the characteristics of definite epochs in the time scheme and his ability to place these epochs roughly in the correct order'. Those tests, from a battery of eight sets which were almost entirely verbal, included an 'order of dates' test, a 'pictorial identification' test and a 'temporal order of historical characters' test. These pertain to this Chapter and the first year's work in Dudley.

Oakden and Sturt's 'order of dates' was set to six groups of children in year-groups of twenty-five to seventy-five, aged from eight to thirteen; the total population studied varied slightly between two sub-tests, from 243 to 297 children. Pupils were taken from 'the two lowest forms of a girls' High School, (X) a boys' Preparatory School, (Y) and two Elementary Schools (A and B), the latter in a slum district'. The following list was displayed on the blackboards:-

'Attila lived in Hungary in 438 A.D.
Philip lived in Spain in 1585 A.D. (or: Dante lived in Florence in 1312 A.D.)
Nero lived in Rome in 50 A.D.'

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10. Oakden E.C. and Sturt Mary: Development of Knowledge of Time in Children. British Journal of Psychology, Vol. XII, Part 4, pp. 309-336. The tests replicate Mary Sturt's work recorded in "The Psychology of Time" (op.cit) Chapter IV.

This was read to the classes, who were told to write the names of the people, 'in the order in which they lived, beginning with the one who lived longest ago - furthest away, back in History'. A second, similar test was set, substituting the names and dates of Plato, Burke and Swift. It had been intended to use sets of five names, 'but as only 20% of the children tested, aged ten, were capable of answering, we thought that the number should be reduced to three'. (11)

The pictorial identification test was set in Elementary School A, to Standards II, III, IV and V, 'to show whether the children could recognize and distinguish between historical epochs.....' In all, 191 pupils were tested in groups ranging fron ten eight-year-olds to twenty-nine nine-year-olds, fifty-five ten-year-olds, seventy-two eleven-year-olds and twenty-five twelve-year-olds. Each class was shown three large (3' x 4') coloured pictures of:-

'(1) Charles I with typical Cavaliers and Roundheads.
(2) Ancient Britons.
and (3) A tournament at the time of Richard I.'

The children were asked for written answers to five questions, viz:-

' I. Who do you think these people were?
II. When did they live? (Answer any way you like)
III. What things in the picture tell you when they lived?
IV. Give the name of any man or woman who was alive when these people were alive.
and V. Give the date at which these people lived. Never mind if you have given it before; give it again. If you do not know it at all, guess it, but then put 'G' by your answer.'

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11. Oakden and Sturt: op.cit. page 317

Though not strictly speaking a seriation test, the pictorial identification test is relevant here, insofar as it uses pictures at all and in view of what will be discussed later about children's ability to identify what they are required to seriate. The temporal order test however, comes closer to the present theme.

This was another verbal test, set to discover: '(i) what methods children would adopt if asked to arrange persons in sequence..... (ii)..... whether an arrangement on a basis of dates would give the same results as an arrangement by some other means; and (iii) what would be done in the case of people whose dates were not known'. The test was set, in Oakden and Sturt's own words, as follows:-

'A list of five names was therefore given to the children and they were asked first to arrange the people in the order in which they lived, then to assign them to their proper centuries, and then to give their reasons for the original arrangement. An attempt was made to do this as a group test, but it was found unsatisfactory, and the test was then given individually. The numbers are therefore smaller, but more information was obtained. The names usually given to the children were Julius Caesar, King Alfred, Robin Hood, Charles I, Tennyson and Admiral Beattie. They were varied according to the children's knowledge'. It appears later in the description of the results of the test that the children also referred to St. John, Joan of Arc, Lloyd George, Robert Bruce, Chaucer, Milton, Drake and Alexander the Great. Unlike the results of the other tests in this series, these were not tabulated, but there are references to groups of 'fourteen children tested at School Y', and 'at an elementary school.... sixteen children tested, aged eight and nine.'

Results of all three tests indicated to Oakden and Sturt that these children made very little use of dates, possibly due to their inability to perform the necessary calculations. In the first test the children's performance climbed more or less steadily from 45% with the 'Attila series' at eight, to 96% success at thirteen; with the 'Burke series' results improved, from 69% at eight, to 100% at thirteen.

It was noted that ability to succeed with the tests varied considerably from school to school; this is not surprising in view of the selective system in which the schools were situated. Indeed, higher scores in the second test are partly attributed to the fact that School B did not take it. The majority of errors revealed 'great ignorance' to the authors; this ignorance is then demonstrated to be an incompetence with the numbers involved in the dates used. For example, date order was occasionally selected on the basis that the 'bigger number' comes first, or that the final digit determines the full 'size' of a date. 'The utter confusion of a few of the children can be gathered from answers to the questions, for example, M.D. aged ten, at School A: "Nero lived 50 years ago, Dante 1312, therefore Dante lived first". The majority of children seemed vague as to the point from which years are enumerated .... It was suggested by one teacher that "the children failed because of the unfamiliar names and the remoteness of the dates".' If, however, we take 50%+ as evidence of reasonable success, all the age groups, including the eight-year-olds , demonstrated that measure of success; if we prefer to accept a 75% result as a more reliable criterion, then transition to relative success is seen to have occurred at about ten to eleven years of age.

In recognizing pictures of historical characters, 'vague', almost-correct answers (such as 'French, Spanish, Roman Catholics or Raleigh's men' instead of 'Stuarts') plus correct answers, range from 53% at eight years of age to 64% at eleven; the twelve-year-olds' result falls to 55%, 'due to the backwardness of the children tested'. There was an increase in general accuracy at eleven years of age. Dating was the most popular choice of answer to the question, 'When did this character live?' but at the youngest ages was so frequently wrong as to have little meaning. Between nine and ten the children changed to description of time by reference to 'the times of' another famous person. The expression 'long ago' was popular only with the youngest children and the epoch, for example 'Stuart period', 'Stone Ages', 'Middle Ages' etc., was unusual, except at ten. This result 'may be due to accident, or it may indicate the point at which the change from

the indiscriminate giving of dates is ceasing.' (12) By one means of description or another, in this test the accuracy of dating the pictures rises steadily from 39% at eight years of age to 71% at twelve; the 50% score is passed at ten and accuracy as regards the date improves between the ages of ten and eleven; accuracy in terms of naming an epoch is also at its best at ten years of age.

With the seriation test proper, where arrangement of a sequence of five named characters was required, the usual method of ordering was as 'a rough dating by epochs'. Otherwise, some children placed those characters earliest which they had learned first in school, or by reference to their order in the textbook. 'The most advanced form ... is the true arrangement of dates. Only one child, a girl aged nine, was found to use this method fully, though another used it in some degree. There did not seem to be any form of arrangement characteristic of a special age ..... When the children were asked to arrange in order by centuries the names they had already arranged in order, it became clear how little importance the majority attached to dates ..... Children who had the order quite, or practically right, might get the dates all wrong ..... There was a general tendency to put unknown people early.' (13)

We are finally led to the inescapable conclusion that the 'knowledge of time' postulated by Oakden and Sturt in this formative study, and their recognition of seriation and sequencing skills as special evidence of such knowledge in action is more a reflection of children's verbal and numerical ability than of their real ability to perceive a sequence of known items.

Some of these tests were repeated, in minute detail, by N.C. Bradley (14) 22 years after the studies of Oakden

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12. Oakden and Sturt: op.cit. page 326.
13. Oakden and Sturt: op.cit. page 329.
14. Bradley N.C: The Growth in the Knowledge of Time in Children of School Age. British Journal of Psychology, No: 138, 1947. Pages 67-78.

and Sturt. Bradley used the 'Attila' and a new 'Captain Scott' test to investigate order of dates; a new picture-arrangement test adopted the 'ages-of-man' series already popular with Piagetian followers and psychologists. For the latter test Bradley used a sample of 57 children aged only five, six and seven, in groups of 18, 20 and 19 respectively. With the order-of-dates test the population was 177 children in all, aged from eight to thirteen, in groups of 20-30 children, with a larger group of 47 twelve-year-olds and a smallest group of 19 thirteen-year-olds. In the picture test the five-year-olds failed to score at all and the six-year-olds attained only 20%; at seven however, the scores rose sharply to 79%. (Bradley was prepared to accept 75% as indicating 'a reasonable grasp of the question asked'.) In the order-of-dates test, this percentage of success was not consistently achieved, nor exceeded, until after the age of ten; at eleven and twelve the averages rose to 86% and 90% respectively. Overall, Bradley's main conclusions were that: 'in general the capacity to understand the conventional time-scheme and to use particular time-words correctly is later in developing than is usually believed, and this is of major significance, particularly in relation to the teaching of history. In particular, Oakden and Sturt's conclusion, that there is a sudden access of time-knowledge between the ages of ten and eleven years is not confirmed, and the process is seen to be essentially gradual, even and continuous.' (15)

Meanwhile, in America, two studies, undertaken in 1939 and 1944, were concerned more practically with the relationship of time-concepts to a curriculum in schools and, in the latter case, with pictorial rather than with verbal indicators. These were the investigations of time-concepts carried out by Frederick Pistor and Kopple C. Friedman. (16) Of these, the former, which involves a series of pictorial sequence tests, is the more germane to this Chapter. Let us therefore

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15. Ibid: page 77.

16. Pistor Frederick: Measuring Time Concepts of Children. Journal of Educational Research. Vol. 33, No: 4, 1939. pages 293-300. And: Friedman Kopple C: Time Concepts of Elementary School Children. The Elementary School Journal, 1944. Pages 337-342.

deal briefly with Friedman's later study of time-concepts before the age of eleven. Friedman found, in a study involving 697 pupils in kindergarten and in Grades I to VI in three elementary schools in Minneapolis, firstly that a child perceives ideas which are near to him in time and place earlier than he perceives those which are remote. He was also led to the conclusion that 'there is not so much logic in the child's thinking concerning the future as in his thinking concerning the past'.

In Friedman's chronological sequence, the section containing events to be ordered included eight groups of four items each. The first group dealt with days of the week, the second with months of the year. A third set involved the sequence of national holidays and the next comprised not only 'the time when Mother was born' but also the lifetimes of Washington, Lincoln and Columbus. Fifthly, the pupils' own lifetimes were related to the times of the Pilgrim Fathers, the First World War and Bible days. A sixth group of dates dealt with familiar anniversaries such as Washington's birthday, New Year's Day and the beginning and end of the school year. Finally, two more groups of questions asked for 'a group of ordinary dates' and a more difficult set in the time before and after Christ. Friedman's study is distinguished by his relating these findings to a time-line, 'a teaching device used to stimulate a sense of space-time relation'. Although Friedman concluded that mastery of the time-line exercise was 'far from universal - 46.5% at Grade VI - nevertheless by the time the pupils had reached that Grade they have a satisfactory comprehension of our conventional time-system'. He also felt that 'practice in putting items into chronological order should stimulate learning that emphasises ideas of development, relationships and sequence.' (17)

Frederick Pistor, in 1939, began his work from the basis of Oakden and Sturt's previous findings. 'It has been found,' he assumed, 'that children under eleven years attach little meaning to conventional names of periods, especially

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17. Friedman K.C: op.cit. page 342.

dates .... not until pupils are eleven years do they pay attention to subdivision of the past or period history.' (18) Pistor's classification of the processes involved in classifying time-concepts was subdivided into, for example:-

> '2. Arranging events or artefacts in chronological order ..... (b) Ordering chronologically past events related to each other, without a present event being given ..... (d) Ordering chronologically past events unrelated to each other without a present event being given .....'

His first experimental set of tests having been verbal, pupils with reading disabilities were penalized; a second edition of tests presents half the items in non-verbal or pictorial form. Pistor's intention was to show the need for 'the study of the development of children's time concepts as a basis for intelligent planning of the elementary school social studies programme.' His tests were validated with 'young adults, junior college students; a group who had recent experience of college history courses, another who had no recent study experience.' Each group consisted of sixty students and Pistor's set of four tests were closely modelled on Oakden and Sturt's battery. They included another time-order relationships test; seventy-two questions which contained sets of five pictures of events or artefacts to be arranged in chronological order. The pictures, crudely drawn, were thematic, using familiar subjects such as houses, costume and vehicles. Given the set of 'Homes', the child must select the house which came first and rank it '1', the home which came next at '2' and so on. In the time-causal sequence test a set of three sequential events or artefacts on a theme such as vehicles left a fourth space to be filled from a selection of five more pictures. Pistor found these two tests, with respective reliability coefficients of .87 and .82 'a valid and reliable instrument for further research in the development of children's time concepts'. The difference in the means of his two groups had been 10.4 in favour of the history students.

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18. Pistor, F: op. cit. page 293.

In 1961 Vikainen (19) discovered a positive benefit, at ten to eleven years of age, from teaching history which emphasised chronology by means of systematic understanding of time-periods; previously Flickingher and Rehage had advocated an understanding of time-lines at thirteen, with dates at sixteen. (20) It is in an unpublished M.A. thesis of 1960 that one finds the nearest approximation to the non-verbal tests of children's ability to seriate historical events and stereotypes which were to be developed during the first year of the Dudley project. Kathleen Henry set out to examine Piaget's claim of a progressive construct and three well-marked stages of development of young children's time concepts. (21) She set a series of tests which owed more to the work of Oakden and Sturt than to Piaget and his followers. Here we find again the verbal questionnaire on time-telling, the temporal vocabulary tests and the temporal absurdities which were already familiar. To these she added a personal time-line which invited the child to sequence the main events of his own lifetime; this was, in practice, omitted as too difficult.

Most relevant to our study were Henry's picture seriation tests; these begin by reflecting the work of the psychologists. We find a set of people at different ages to be arranged from youngest to oldest; there is a set of pictures illustrating the seasons of the year, from earliest to latest, and another group of pictures of means of transport to be arranged in order of speed. Finally, there is a set of pictures of houses, dated 1894, 1927, 1943 and 1978 (then in the future), to be arranged in order of their building. As with previous tests described the questions

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19. Vikainen, I: The Development of Time Concepts and Time Schemes Report from the Institute of Education in Turku, Finland.
20. Flickingher, A. and Rehage K.J: Building Time and Space Concepts 20th Year National Council of Social Studies, 1949.
21. Henry, Kathleen: A Study of the Development of the Concept of Time in Children. Unpublished M.A. Thesis of University of Liverpool, 1960.

associated with the pictures require considerable verbal response, also a great deal of calculation by number. With reference to the series of houses, the children were asked: 'Which was new when you were a baby?'; 'If your grandfather had lived in a new one when he was young, which would it be?'; 'Which would have been built when your mother was a tiny girl?' and 'Which one has not been built yet?'. Two further series of dated men of the past illustrated four or five periods, dated, in the first case 1785, 1849, 1876, 1901 and 1923. The second series ranged from 958 B.C. to 615 A.D., 1543 A.D. and 1803 A.D. In the first case the children were asked: 'Who was born first? - next? and next? etc.'; 'Which men could still be alive?'; 'One could not possibly have been alive when the other were; which is this?'; 'Which century did each man live in?' and 'How many years do people usually live?'.

Henry's sample of children included twenty-eight boys and twenty-eight girls attending a Primary school of 300 pupils in a small industrial town, chosen by birth-date, with eight children at each three-month level between five and eleven years of age, that is, seven age-groups in all, omitting any with I.Qs lower than 80. Over the entire age-range, Henry discovered an average level of success with the 'Houses' series of 50% to 61% rising gradually from year to year. As to the series of 'Men', for the nineteenth and twentieth century series, the answers to the written comprehension questions ranged from 25% to 66%. In the case of those groups which were divided into B.C. and A.D. items, the ability to seriate them was very low indeed, at 5%, with virtually no scoring before eleven years of age. These tests appear to sacrifice their pictorial, non-verbal virtue as soon as a printed date is added to the picture.

Henry concluded that the verbal factors in these tests were more important than Piaget had been prepared to admit; her results appeared to show a gradual growth in comprehension with increasing age, exceeding 50% success rate from nine years of age, but scoring more than 75% average only after eleven. Her findings agreed with Piaget's that 'the age of nine or thereabouts' marks a decisive turning point in children's

concrete operational understanding of time relationships, but 'a general facility in dealing with temporal matters appeared to emerge as early as eight to nine years of age'. (22) The stages of development marked by her tests, however, are not always as clear-cut as Piaget appeared to indicate. Henry found the idea of 'the century' 50% assimilated by nine years of age and fully understood by 100% of the sample at eleven years. Within the child's own lifetime, the further away an event, the lesser was the degree of accuracy he appeared to demonstrate in time-placing.

As to seriation, Henry's tests demonstrated 50% success from the age of eight and 100% certainly by ten to eleven. This is an earlier development than in the previous test. 'The temporal events test showed that the longer temporal spans were the last to be apprehended and this was confirmed in these tests also. Even at the age of eleven years the concept of 'century' is not fully established and the ability to deal with remote periods is correspondingly uncertain.' Thus, as late as 1960, with a greater emphasis upon the value of pictorial, as opposed to entirely verbal, testing, the close relationship of the ability to recognize time-clues and place them into a well-perceived order of time is still closely tied to verbal and numerical ability. 'Concept of time' is recognized mainly as a facility, or lack of it, in calculating numerical dates and durations in terms of periods of numbered years.

The effect of this body of research upon pedagogical advisers appears to have been direct and immediate, although a pious hope of the possibility, albeit remote, of children learning history with some sort of sensible relationship to chronological order survived throughout the period of the twenties to the seventies. In 1923, the Board of Education's pamphlet on the teaching of history stressed the necessity of the child's acquisition of a definite 'consecutive outline' of outstanding historical figures and events; this outline

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22. Henry K: op.cit. page 296.

was described as 'an accurate framework'. (23) The Handbook of Suggestions for Teachers, in 1927 assumed that by the age of eleven or twelve a child should have become acquainted with 'outstanding figures in chronological succession'; the loss of a sense of historical sequence was sadly noted. (24) The Hadow Report, in 1931, advocated the presentation of 'concrete pictorial and visible forms' to children up to the age of eleven. The Report accepted that 'problems of time seemed more difficult for pupils than equivalent problems expressed in terms of space', but assumed that 'at the primary stage the child's power of classifying the chaotic objects of his experience is rapidly improving'. Otherwise, there is little, if any reference in the Report to the necessity of children being able to make correct sequences and series of recognizable data. (25) 'We did not notice in our visits' observed a Board of Education Committee, regretfully, 'much systematic development of the time-sense, or indeed, much enquiry into the interesting questions which this problem arouses.' (26)

The concern for the problem of chronology in the teaching of History resulted for some years after 1930 in the occasional preoccupation of educators with the possible uses of time-lines and time-charts in the classroom. Several useful works were published from time to time (27) of which the most influential and long-lasting in its effects was probably

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23. Board of Education Pamphlet No: 23. The Teaching of History. H.M.S.O. 1923, pages 12-13.

24. Handbook of Suggestions for Teachers. Board of Education. H.M.S.O. 1927, pages 112-139.

25. Report of the Consultative Committee on the Primary School, Board of Education. H.M.S.O. 1931, passim.

26. The Teaching of History. Board of Education, Educational Pamphlets, No. 37.

27. e.g. Jones R: Historical Diagrams and Time Charts. London Teachers' Association, 1924.
Also similar works by Guildford J.P: Spatial Symbols in Apprehension of Time. American Journal of Psychology No: 37 (1928) and Kaye M: The Sense of Time and its Relation to the Teaching of Chronology. Unpublished M.A. Thesis of Leeds University, 1933.

the Historical Association pamphlet first published in 1920 by Helen Madeley and read by successive generations of history students and teachers. (28) An attractive and practical work was that of H.G. Wood; the author well remembers himself, as a pupil in 1935 diligently applying the different watercolour washes of opposing Yorkist and Lancastrian factions, inspired by the kindly teaching of Ronald Gould, who surely laid scholastic foundations of a lasting order during those mornings' work! The results were attractive, carefully scaled and bore a distinct resemblance to the type of chart so colourfully illustrated by Wood. Those authors who advocated the use of time-lines saw them as a method of introducing activity into the process of learning, to 'imbue the pupil with something of the spirit of research'. (29) The chart was intended 'to cultivate the time-sense, not merely to deal with the drudgery of dates'; yet Wood felt that 'the reaction from the monotonous dwelling on dates and names of kings and battles has gone quite far enough'. To Madeley, freedom from the vexations of uncertainty 'can only be obtained if one has some knowledge of the sequence of events and a few chronological fixed points'. (30) Charts were valuable in presenting a visual image, they compelled selection of concisely presented material and acted as 'a guide and implement for private and adequate study'. Yet, although Wood advised the integration of the necessary chart-making skills into the normal arithmetic lesson at seven or eight years of age, he and his contemporaries appear to disregard the inevitable difficulties which children of that age would encounter in attempting to develop a numerical concept of time, as pointed out in other contemporary research.

Summing up the negative results of that research in 1963, Gustav Jahoda concluded that: '... the age of introducing time-charts is, judging by the mass of available evidence, entirely unrealistic, and the conventional wisdom of teachers

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28. Madeley Helen M: Time Charts Pamphlet No: 50 of the Historical Association, 1920.
29. Wood H.G: History Time-Charts: How to make and use them Nisbet & Co. (London) 1926, page 1.
30. Madeley H.M: op.cit. page 1.

has gone far astray in this particular instance ...' (31) As late as 1952 that 'conventional wisdom', expressed by the Incorporated Association of Assistant Masters in Secondary Schools, (32) had recommended that 'the main use of the time-chart is to provide a chronological framework within which events and developments may be recorded, and to guard against the vagueness of time-sense which may result from teaching arranged, often necessarily, by topics rather than by reigns ..... Charts are useful throughout the main school course.' (33) Yet, in spite of such advocacy, the vaguer influence of research had its way with the average teacher; there was no doubt in 1976 that Dudley teachers generally 'felt' that the recommended use of classroom time-lines with this project was 'old-fashioned', out of favour and slightly disreputable. Otherwise convinced the teachers, mostly, fell upon the classroom time-chart with relief, as a useful, neglected tool. (33a)

Almost another decade of teaching was to elapse after Jahoda's judgement before educationists were prepared to review the place of chronology and sequence in the classroom.

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31. Jahoda Gustav: Children's Concepts of Time and History Educational Review Vol: 15, 1963, page 102.

32. The Teaching of History. Issued by the Incorporated Association of Assistant Masters in Secondary Schools. Cambridge University Press, 1950 and 1952.

33. Ibid. pages 148-150. In 1968 Peter J. Congdon in an unpublished M.A. thesis of London University: An Investigation into Research on the Development of the Concept of Historical Time in Children in the upper age-group of the Junior School. (page 45) drew attention to the findings of J. Cohen, working with undergraduates using 'the prop of dates and a spatially represented time scale..' and considered that these might cause teachers to question Jahoda's criticism of the use of time-charts. 'For more remote history they might profitably be used, even with young children.' Oakden and Sturt had recommended their use 'much more extensively than they are at present' in 1922, op. cit. page 235.

33a. As early as 1923 the Board of Education discovered that: 'I thought dates with quite out of date' is not an uncommon remark from a teacher of the recent generation. Report on the Teaching of History. Board of Education Pamphlet No: 37 (1923).

In 1971, Coltham and Fines's 'Educational Objectives for the Study of History' included amongst the essential skills and abilities 'which are necessary for the effective study of History': (The child) 'uses correctly basic time-indicators....' and '.... can combine time indicators with a sequence of events.' (34)

For the Schools Council project on Place, Time and Society 8-13, 'continuity and change' were seen to take their place among the seven key concepts. Describing the project, Gordon Elliott defined a valuable set of starting points for the Dudley project. He reminds us that Watts was confident in his belief in children's ability to learn concepts such as Stone Age, Romans and Industrial Revolution. 'He maintained that children often bring to the learning of history stereotypes of many historical concepts which can be used as starting points in talking about the past. Although these stereotypes may lack the rich content derived from personal experience, the teacher can choose from a variety of resources - people, documents, maps, films, plays, objects - in order to enrich and refine the stereotype.' In an important section on 'Sequence in concept learning', Elliott perceived that '(Children) had some knowledge of long ago and the changes that have taken place in their world in time .... The children had difficulty in using chronological time but they were able to use sequential time! In terms of their personal experiences of family history, Primary school children 'have at their disposal a rough and ready chronology based on their own pattern of experience.' (35)

These findings were influential on the shaping of the Dudley project.

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34. Coltham Jeanette B. and Fines John: Educational Objectives for the Study of History. The Historical Association, Pamphlet T35, 1971, pages 17 and 20.

35. Elliott,Gordon: Teaching for Concepts. Place, Time and Society8-13, Collins E.S.L. Bristol for the Schools Council, 1976, pages 10, 17 and 22. Elliott's reference is to: Watts D: The Learning of History Routledge and Kegan Paul, 1972, page 31.

In 1979, at an important Department of Education and Science course about History for children aged 8 to 13, a working paper compiled by David Sylvester H.M.I. recommended the teaching of 'chronology rather than time-sense'; children should be helped to develop the ability to put events into sequence, using the main chronological conventions. (36)

One must surely assume that children's ability to place a set of historical items or events into a correct chronological sequence is an essential aspect of any recognizable ability to understand past historical time. This may at first have very little to do with another ability to date the same items, or to measure their duration and intervals numerically. Sequence, in the Primary school might suffice. Thus, the group of seven-year-olds mentioned in Chapter One(37), without guidance or instruction, worked out a correct sequence for seven prehistoric tools, placing them in order for a Paleolithic hand-axe to two Mesolithic microliths. The same children experienced little difficulty in distinguishing the sequence of modern scale model of a man o' war and its original existence in Nelson's day. Few children were deceived by the difference between a 'real' dinosaur and the photograph of a modern model of a dinosaur. In fact, a certain awareness of sequence appears to be normal, in Elliott's 'rough and ready' terms. Presumably, earlier researchers made the wrong choices of items to be sequenced, or presented them in incomprehensible forms.

For the purpose of this project, having first outlined a curriculum of stories and museum objects to be related weekly to a classroom time-line, the possibility of testing children's ability, at the age of seven to eight years, to recognize and sequence sets of historical items was assumed.

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36. Sylvester David, H.M.I.: History 8-13: A Working Paper unpublished typescript circulated at a Department of Education and Science History Conference at York University in July, 1979.

37. Chapter One. above, page 25.

In 1976 the first of a series of eight picture-sequence cards was set to the pilot and control groups. (38) For Tests I to VI the picture-cards were compiled by the Deputy Warden of the Dudley Teachers' Centre and reproduced on A4 paper by means of the Centre's electronic stencil cutter. Tests VII and VIII were produced by students of the Foley College of Art in Stourbridge and professionally printed.

Each card contained ten items which were intended to be recognizable stereotype versions of familiar people, places and events from the historical past. At first, for practice, two five-picture tests were used, but these proved to be too simple; the experience here was the reverse of that of Oakden and Sturt with their original written sequence test, in which five names were perforce reduced to three 'as only 20% of the children tested, aged ten, were capable of answering'. (39) Different cards included, for example, pictures of an astronaut, a Cavalier, a Roman soldier, a frame from the Bayeux Tapestry, the Pyramids, the Parthenon, a World War I tank, Concorde, Lord Nelson, Henry VIII, Elizabeth I and Elizabeth II, Guy Fawkes, a Blenheim bomber, a medieval knight and many others.

The time-line covered by the complete range of seriation tests was as follows:-

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38. The results of the first trials of this type of picture test with the ten-eleven year age-group are given above in Chapter One, pages 35-36. The full set of tests is included in Appendix II on pages 407 - 414

39. Oakden and Sturt: op.cit. page 317

Fig. 9 DISTRIBUTION OF HISTORICAL STEREOTYPES IN SEQUENCE TESTS 1976-80

		Tests	Total
Fossils (or earlier):	600,000,000 years	II,III,VII, VIII,VIII	5
Dinosaurs:	200,000,000 years	I,II,III,VII	4
Prehistoric Man:	500,000 years	II,III,VI, VII,VIII	5
Ancient Civilizations:	4,000 years	I,III,IV,V, VI,VII,VIII	7
Classical Era and Life of Christ:	2,500 years	I,I,II,III, IV,IV,V,V,VI, VI,VII,VIII	12
Medieval Age:	1,000 years	I,I,II,III, IV,IV,V,V,VI, VI,VII,VIII, VIII	13
Renaissance:	500 years	I,II,III,IV, V,VII	6
Enlightenment:	250 years	II,IV,V,VI	4
Industrial Revolution	150 years	I,II,III,IV, V,VI,VII,VIII	8
Grandparents' lifetime - 1900:	80 years	I,II,III,IV, V,VI,VII,VIII, VIII	9
Present generation:	0-25 years	I,II,III,IV, V,VI,VII	7

The only picture illustrating a period more remote than fossils, and thus off the suggested scale, was an imaginative illustration of the explosive creation of our universe in Test VIII. It was suggested by teachers that this could also be interpreted as 'the end of the world' and an alternative placing of either first or last in Test VIII's sequence was allowed in marking. To keep the scale within manageable proportions for graphs (See Figs. 12,31,36) the 'medieval' period included the Dark Ages; thus several tests had an early medieval illustration as well as a 'Gothic' example. Similarly, as a Christ-figure was deliberately included in all but one of the Tests, this adds to the Classical era, which was also regularly illustrated by pictures of Romans and Greeks.

The pictures were all taken from the history of Western civilization and had a marked Anglo-European content.

This was intentional, so that the most well-defined and readily available stereotypes likely to have been formed in the children's memories were offered them. Some landmarks were regularly used, often the identical picture was reprinted in more than one Test. The four dinosaur pictures used, for example, included two pictures of a Tyrannosaurus Rex; the First World War was illustrated in three different ways, the Second World War in four. A picture of the Crucifixion was duplicated, as was a drawing of prehistoric men; the Bayeux Tapestry became familiar, having been used in four different fragments. Tutankhamen and Queen Elizabeth II appear twice, the former in an identical illustration; Test IV included only famous people, dating from Jesus Christ to the present Queen. Up-to-date illustrations showed television, Concorde, an astronaut and a skate-boarder; there was, accidentally, neither a picture of Christ, nor a present-day item in the final Test. Within the last three generations the divisions become slightly ambiguous for one or two figures; the age-limits of grand-parents and great-grandparents tend to become indefinite and, occasionally, a Victorian example could be held to overlap 'Industrial Revolution' and 'Grandparents' lifetime; these distinctions are however only notional for purposes of graphing results; they did not affect the children's marks in any way.

It was possible that confusion might arise over the continuing existence in time of a 'past' object; the paradox of historical time is that much of its evidence survives in the present. Thus the Parthenon is more than 2,000 years old but survives in dilapidation today; it is also, incidentally, the model of many a nineteenth century Town Hall. Children might date its picture from the Ancient Greek original, eighteenth century neo-classical imitation or by the date of a Mediterranean holiday or an educational cruise. Certainly, the ruined form offered by the artist on page 413 s ould encourage children to assume a modern date. Other events, more particularly people, have a more finite existence in time, but may not be as easily recognized as stereotypes. It was customary in the tests to endeavour to

illustrate, not only things and people, but also incidents, such as the Gunpowder Plot (Test II) and the Jarrow Crusade (Test VII). For this, and all the later tests, the convention was adopted of using the term 'event' for any picture. Teachers endeavoured to persuade their pupils always to think in terms of the origin of each event, whether this was the knapping of a hand-axe, the building of a Victorian nursery, the manufacture of a model dinosaur or the invention of the telephone. Often the 'event' is difficult to recognize as a happening, as for example, in the case of Stonehenge, a museum street or a set of coins. Nevertheless, with practice, the convention appears to have become well enough established and the idea of origins adequately understood. As in so many aspects of this work, a special vocabulary aids the development of ideas.

A further obstacle to the children's adequate demonstration of their sequencing ability must inevitably be their probable inability to recognize some of the events for what they really were. It is, for example, impossible to place Lord Kitchener if you assume that the moustachioed face is that of Henry VIII or Earl Harold of Wessex. In fact, the children's powers of observation and deduction were usually highly developed. For example, the blurred suggestion of propellor-blades (Test I) gave many children the impression of a Second World War bomber; there was no prospect of confusion with Concorde (Test V). Even a smudgy print of a 1914-18 'Tommy' (Test III) was recognized by the buttoned tunic, the basin-shaped helmet and bayonet by 16% of the pilot pupils. It was essential to verify identification of each picture as far as possible. For all tests after Test I the test-paper provided two sides for answers. Firstly, the 'top' face asked for sequencing into ten numbered boxes, labelled 'Earliest' to 'Latest'. Overleaf, the pupil was asked to state: 'Recognition: When I did this test I thought that each picture was:...' The order of each set of statements was deliberate, in order to provide the non-verbal experience first.

A written test of 25 questions was set, in the Autumn

term of 1977, of the 1337 children, then aged 8-plus, in both control and pilot groups. (40) These tested the children's understanding of 'Earlier and Later' in terms of clock-face time in hours, their daily timetable, the relative ages and lifetimes of their families and other people and of more remote time, including historical and prehistoric events. The questions tested children's understanding of such words as 'earliest', 'latest', 'before', 'last', 'first', 'recent', 'oldest' and 'longest ago'. The space of time to be estimated, or calculated, ranged from 4 to 48 hours, periods of months, from 5 to 70 years and from 200 to 600,000,000 years.

The results of this test were satisfactory. Conclusions drawn from this reasonably large sample were: firstly that both control and pilot schools' children were capable of dealing with verbal interpretation of 'earlier and later' with a relatively high degree of success, averaging 74% correct answers from the control group and 78% from the pilot schools. In the analysis of individual questions this slight advantage of about 4% in favour of the pilot group was maintained throughout the test, with the exception of four questions, (Qs: 9, 20, 21 and 23) where the control group were marginally superior. The advantage of the pilot group's extra practice during a year's curriculum and sequence tests was most clearly seen in the final two questions (Qs: 24 and 25), which asked for the earliest items in a choice of three, a somewhat similar test to the now-familiar ten-picture sequences. The pilot group was more able to place a fossil or a knight in the correct first place; otherwise their additional scoring is consistent, but not large.

Clock-face time appeared to be thoroughly understood by almost all the children, with a success rate of 93-95% in each group. More difficulty was experienced with the less familiar European 24-hour clock but the results were still reasonably high at 71:76% (control:pilot) group. The children handled dates successfully, at 73-81% and were consistently high-scoring in relating people's ages and

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40. The test paper is reprinted in full in Appendix I on pages 388 - 393

lifetimes to a time-scale. They understood the use of words such as 'last' (79-81%); 'before' (88-92%); 'latest' (63-94%) and 'earliest' (71-95%). The word 'recent' was less familiar, with only about 50% correct responses and the least successful answers were given to those questions which dealt with the children's daily timetable, such as Q.12, the most consistently misunderstood, at 40-43% and Q.15 at 45-52%. There was more confidence in dealing with the remote past when dealing with Jesus, fossils and knights. (41)

Question 21, which asked for the relation of three generations to the year 1910 might be considered to be one of the most useful indicators of the children's understanding of past time beyond their own lifetimes; this question was well answered, with a slight advantage to the control group (89-90%). The two questions relating Christ's birth to their own lifetime and their mothers' and the calculation of the year 1910 in relation to their grandfathers' generation were certainly as significant an indication of their real understanding of time as those questions in Oakden, Sturt and Bradley's tests, which were taken in their time as indications of young children's misunderstanding of chronology.

It was legitimate to assume from the results of this verbal test that children at seven to eight-plus were able to understand the requirements of picture tests which asked for a sequence in terms of 'earlier and later', but there was a wide discrepancy in school-to-school results. In the pilot

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41. These results are the antithesis of Friedman's suggestions in: Time Concepts of Elementary School Children. op.cit: page 339: 'As might be expected, responses for 'a short time ago' were more successful than those for 'a long time ago'. They also cast some doubt upon the suggestions of Jahoda, and others, that ' it might be profitable to start from the other end, e.g. 'When your mother or grandmother was a child.' Jahoda G: op.cit: page 102.
For further confirmation of the children's superior ability with remote periods of time see pages 137-8 and particularly Fig: 13

group the averages ranged from 64% (School OJ) to 84% (Schools EY, DD and SS). The children's individual scores for this test were coded (LCV) for the computer as a basic record for later correlation with other scores. (42)

The first series of six Recognition and Sequence Tests was set at one-term intervals between September 1976 and July 1978; two further tests were kept in reserve, to set in June 1979 and June 1980 for comparison with the first two years' achievement. Over the main set of tests, recognition averaged 48% for the control group and 55% for the pilot group. Scores by individual schools varied as much as from 35% (Pilot school EF) and 35% (Control school OV) to 67% (Pilot school SS) and 61% (Control school JJ). (43)

Sequencing scores were inevitably depressed by the method of marking. Single-handed, with hundreds of papers returned, it was impossible to be both consistent and discriminating in attempting to place the relative positions of ten placings in a sequence; the over-simple, but essential solution was to mark sequence by the absolute position of each key letter. Thus, if the entirely correct sequence, as in Test VI, was: A:I:B:D:C:E:F:H:J:G, then the incorrect sequence: G:A:I:B:D:C:E:F:H:J might not be analysed quickly enough to detect that in fact nine items are in a correct sequence; no marks would be scored. Similarly, the attempted broken sequence: A:I:D:C:E:B:F:H:J:G would score six points although only one item (B) is misplaced. In the final interpretation of the sequencing scores it is necessary to interpret the raw figures with discretion. The average scores are certainly lower than the children's real ability to sequence; they can best be stated as 'the minimum statement of children's possible skill in sequencing known historical stereotypes'.

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42. See correlations made in Chapter Seven on page 285
43. See the full range of individual school scores given in Tables XXXVIII to XLI in Appendix II on pages 416 - 420

The question of how rigidly we must relate recognition to sequencing scores is vital to our estimation of the children's real ability. Are we, for example, entitled to accept 55% as the average sequencing skill of the pilot group from the ages of seven to nine? This is the simplest statement of their achievement. If we accept that only 42% of the pictures were accurately recognized and described, it might be argued that the real proportion of actually recognized items sequenced is much larger than 55%. Conversely, if we count only those pictures correctly sequenced which were also correctly described, then the 'real' sequencing skill must be reduced by half, to 28%. Our interpretation depends upon our definition of 'guesswork'.

In this interpretation we must remember that we are endeavouring to match a verbal with a non-verbal demonstration of skill. 'Recognition' in the terms of this test comprised the ability to recognize, name and describe legibly the subject of a picture. An indistinct or misleading picture could not be correctly sequenced by any child who failed to recognize it. On the other hand a correctly recognized item, illegibly described, would gain no credit. It is certainly true that, throughout the marking of the tests, 'creative' spelling demanded constant vigilance.

There is no doubt that many children who possibly knew more of the items than they were able to describe lost marks for recognition. It was necessary to recognize and accept such interpretations as 'Issrelight', 'Agipshun', 'Endern' (Indian), 'Nits' (Knights), and 'Ferro' (Pharaoh). Such phonetic spellings were easily recognized and 'Siffal Wor' (Civil War), 'Geasers' (Jesus), 'Jagn' (dragon) or 'Beflyem' (Bethlehem) caused little real difficulty. 'Prehistoric monster' on occasion became 'Breastonic Munster' or even 'Preeyestorkmunsteser'. More demanding was the need to recognize 'Worahp' as 'Pharow' spelled backwards; one wondered how many such explanations were missed in marking. The possibility certainly exists of some children gaining marks for correct sequences of objects which they failed to describe in writing. Reasonably exact definition was

demanded for any mark in the recognition test; 'monster' was not accepted for 'dinosaur', nor 'army man' for 'Roman soldier'; similarly 'an old ship' or 'a sailing ship' was accepted where 'a ship' was not. These criteria compare to some extent with Oakden and Sturt's definitions of 'wrong, vague and right' in marking their pictorial identification test. (44) Some latitude was allowed to a reasonable effort which was not precisely accurate. For example whilst 'Laughing Cavalier' was gladly accepted from 4 % of the children in describing a copy of that portrait, 'Musketeer', 'King Charles', and even 'Spanish or French soldier' were also accepted; 'Oliver Crumble' was not.

Occasionally a teacher would take an individual handicapped child to one side and permit him to speak his answers, which the teacher wrote. There was no doubt but that, by this means, several illiterate children were able to demonstrate their true ability to see and recognize more items portrayed in the pictures. Presumably many others lost marks with less sympathetic teachers. With practice, the marker could retrieve a mark almost lost and detect a meaning intended but almost lost in description by unorthodox spellings; in some cases practice made it increasingly possible to identify what was correctly intended by a few disjointed consonants and a vowel.

It could be argued that any child demonstrated adequate recognition merely by accurate time-placing, using clues of costume (45) and other details rather than an ill-written verbal label as his time-cue. In this interpretation there is no guesswork; the contrary view would be that we cannot allow a sequencing mark to a child who has placed an item on his time-scale without an adequate description of what it was. Certainly the idea that a large number of less literate children might consistently prove to be more able at the non-verbal half of the test, scoring consistently more for

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44. Oakden and Sturt: op.cit. pages 324-5.
45. Oakden and Sturt: ibid. page 327 refers to recognition of period costume as a usual time-cue.

sequencing the pictures than they gained for describing them, was not borne out by the computer's analysis of the individual scores. Only 6% scored, on average, more for sequencing than they did for recognition. These tended usually to be lower than average scores by younger children; the average age of this group was 9.03 with one-third aged 9.00 or less when the population's average age was 9.04 years.

We are able to count the scores of each child in every test after the first, in parts; that is, by separating those pictures which were correctly sequenced and adequately described, from those which were described but not sequenced correctly; and from those which were sequenced but not described adequately. These achievements can be simply described as R-only, S-only or as both, R/S. For the first two years' work, when the children were aged 7 to 9, Tests I-VI combine all items of the same type, subject or period as shown overleaf.

The next table reveals that of all pictures correctly sequenced (42%) two-thirds had also been adequately described; one-third (14%) could be ascribed to 'guesswork' if we adopt that explanation.

We can also regroup the results to draw conclusions as to the incidence of success in sequencing recognized stereotypes in relation to their chronological order. These scores are tabulated as follows (Fig 10):- (46).

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46. For comparative school scores for these tests, see Table XXXVII -XL in Appendix II

Fig. 10 TABLE OF RECOGNITION AND SEQUENCE SCORES RELATED

TABLE III (PILOT SCHOOLS) R/S TESTS I - VI (PERCENTAGE SCORES)

Test & Code	Description	Total R	R Only	R/S	S Only	Total S	Nil
1D : 2J 3G : 5B	Concorde etc. (4)	84	18	66	9	75	7
4A : 6G	Queen Elizabeth II (2)	73	12	62	11	73	14
2F : 3E 6A	Prehistoric Men 3	81	32	49	8	57	11
2B : 3A	Fossils (2)	70	24	46	8	54	23
1H : 2F 3B : 4E 5C : 6D	Jesus Christ (6)	78	41	37	8	45	13
1G : 2G	Dinosaurs (3)	76	39	37	10	47	14
1J : 3D 4 : 5F	Ancient Egypt (4	65	32	33	9	42	21
1A : 4B 5I : 6B	Romans (4)	49	21	28	20	48	32
3F : 5H 6C	Bayeux Tapestry 3)	64	41	23	11	34	26
2 : 3H	World War I 2)	45	23	22	25	47	30
1E : 1I 2D : 2I 5 : 5J 6	Inventions etc. (7)	37	28	19	17	36	36
2A : 4D 4 : 4G 4 : 5A 5G : 6J	Famous People (8)	44	27	17	16	33	39
1B : 3C I : 4B 6. : 6I	Miscellaneous Warriors (6)	39	27	12	19	31	42
1C : 1F C : 4J 5E : 6E	Medieval Items (6)	31	24	7	13	20	55
	Averages as above	56	28	28	14	42	30

Fig. 11 TABLE OF RECOGN TION/SEQUENCE SCORES BY PERIOD

TABLE IV (PILOT SCHOOLS) R/S TESTS I-VI (PERCENTAGE SCORES)

		Col.1	2	3	4	5	6
Test & Code	Description	Total R	R Only	R/S	S Only	Total S	Nil
1D : 2J 3G : 4A 5B : 6G	Present Day (6)	80	16	64	10	74	10
1I : 2H 3H : 4I 5A : 6J	Grand/Great Grand -Fathers (7)	36	25	21	21	42	33
1E : 2D 3 : 5J 6	Industrial Revolution (5)	44	25	19	19	38	36
2I : 4D 5D : 6F	Enlightenment (4)	46	32	15	11	26	41
1C : 2A 3C : 4G 5G	Reformation & Renaissance (5)	39	26	13	14	27	47
1B : 1F 2C : 3F 4B : 4J 5 : 5H 6C : 6E	Medieval Period (10)	48	35	13	11	24	40
1A : 1H 4H : 5I 6B : 2E 3B : 4E 5C : 6D	Classical Age and Life-Time of Christ (10)	66	33	33	13	46	21
1J : 3D 4C : 5F 6I	Early Civilizations (5)	50	24	26	15	41	30
2F : 3E 6A	Prehistoric Man (3)	81	32	49	8	57	11
1G : 2G 3J	Age of Dinosaurs (3)	76	39	37	10	47	14
2B : 3A 3A	Aeons of Fossils (2)	70	24	46	8	54	23
	AVERAGES	56	28	28	14	42	30

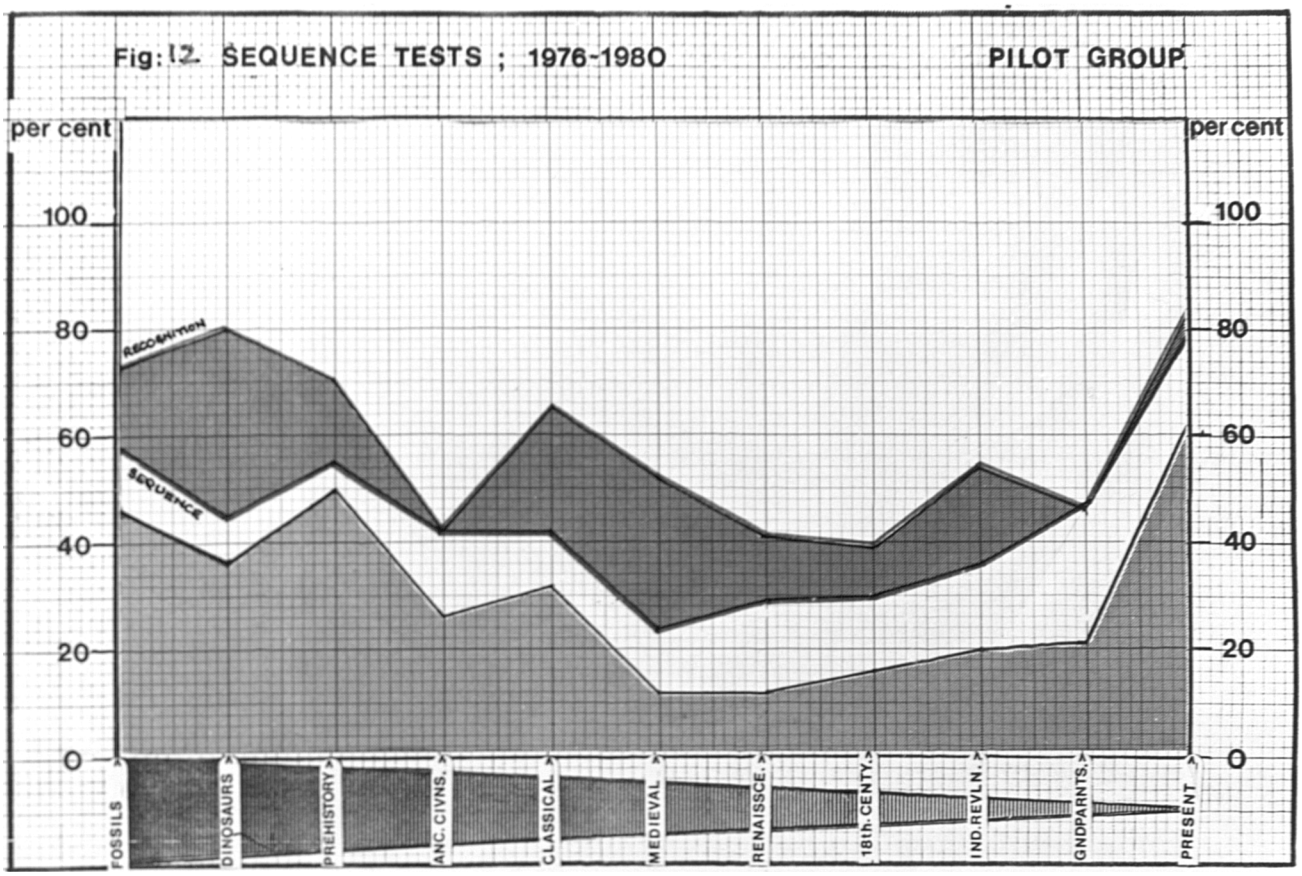


Fig: 12 SEQUENCE TESTS ; 1976-1980
PILOT GROUP
per cent
per cent
100
80
60
40
20
0
RECOGNITION
SEQUENCE
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

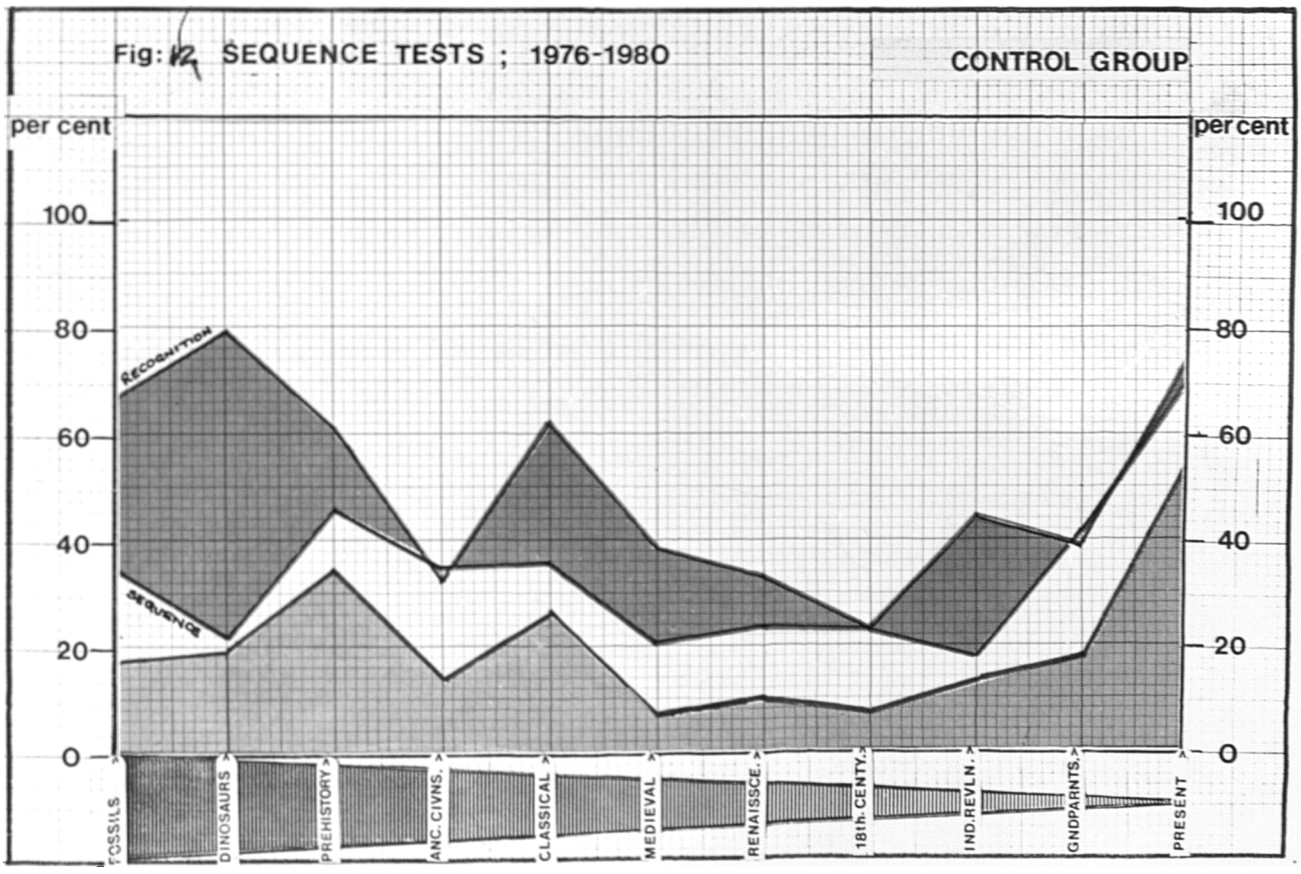
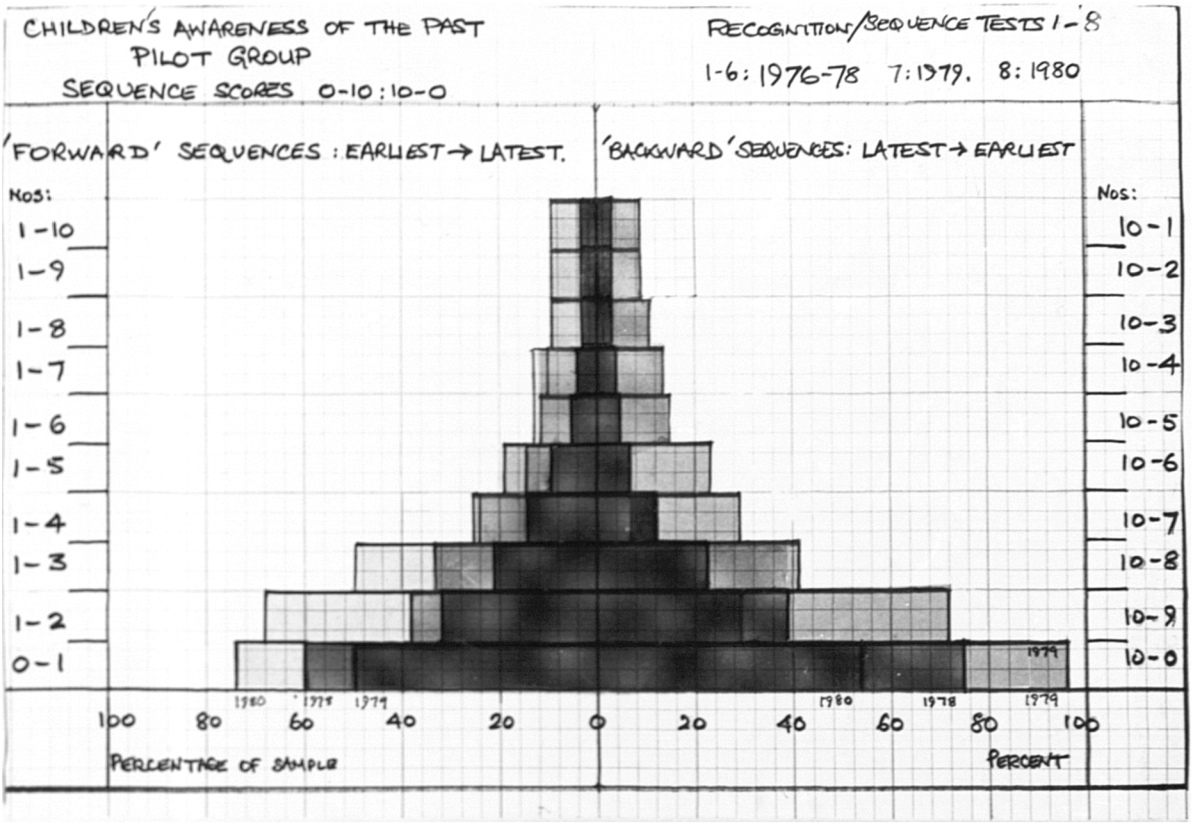
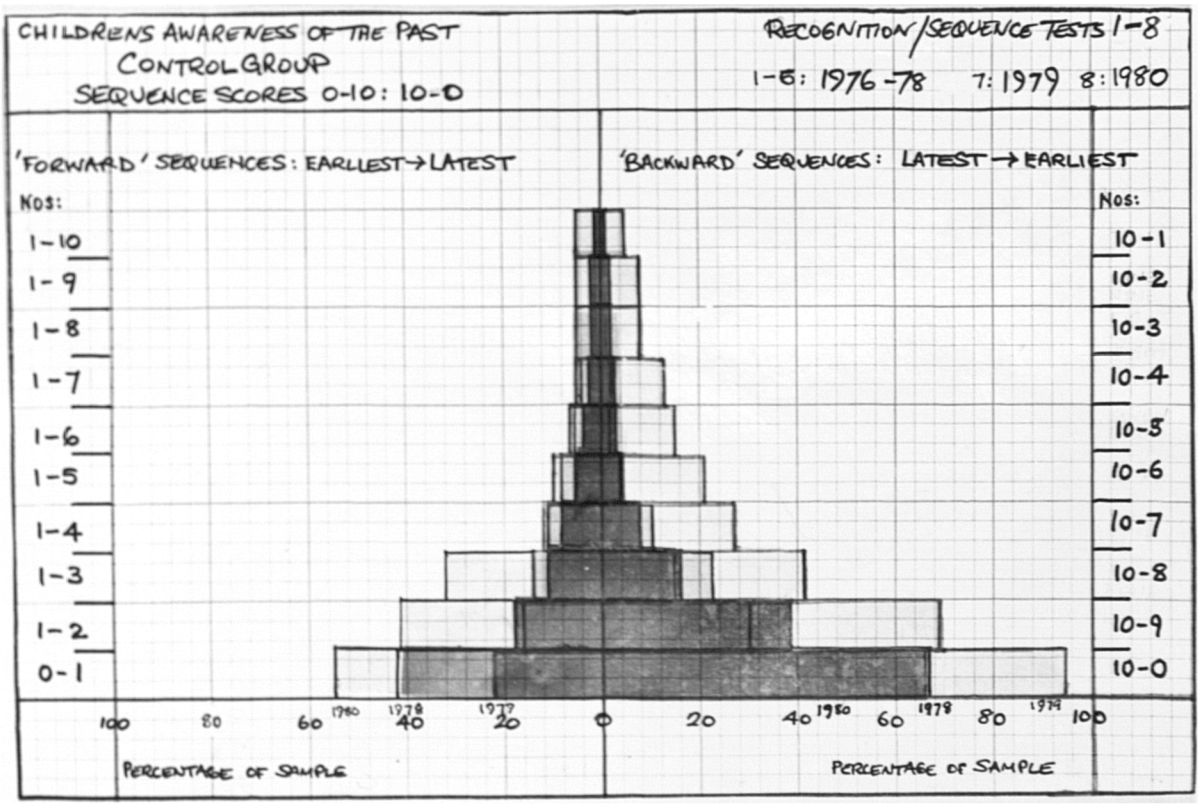


Fig: 12 SEQUENCE TESTS ; 1976-1980
CONTROL GROUP
per cent
per cent
100
80
60
40
20
0
RECOGNITION
SEQUENCE
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

Fg 13.


CHILDREN'S AWARENESS OF THE PAST
PILOT GROUP
SEQUENCE SCORES 0-10 : 10-0
RECOGNITION/SEQUENCE TESTS 1-8
1-6: 1976-78 7: 1979. 8: 1980
'FORWARD' SEQUENCES : EARLIEST → LATEST.
'BACKWARD' SEQUENCES: LATEST → EARLIEST
Nos:
1-10
1-9
1-8
1-7
1-6
1-5
1-4
1-3
1-2
0-1
10-1
10-2
10-3
10-4
10-5
10-6
10-7
10-8
10-9
10-0
1980
1978
1979
100 80 60 40 20 0 20 40 60 80 100
PERCENTAGE OF SAMPLE
PERCENT


CHILDRENS AWARENESS OF THE PAST
CONTROL GROUP
SEQUENCE SCORES 0-10: 10-0
RECOGNITION/SEQUENCE TESTS 1-8
1-6: 1976-78 7: 1979 8: 1980
'FORWARD' SEQUENCES: EARLIEST → LATEST
'BACKWARD' SEQUENCES: LATEST → EARLIEST
Nos:
1-10
1-9
1-8
1-7
1-6
1-5
1-4
1-3
1-2
0-1
10-1
10-2
10-3
10-4
10-5
10-6
10-7
10-8
10-9
10-0
1980
1978
1977
100 80 60 40 20 0 20 40 60 80 100
PERCENTAGE OF SAMPLE
PERCENTAGE OF SAMPLE

This reveals with what periods or with which events the children were more or less successful; their analysis can also be shown in the form of graphs. These reveal consistent trends throughout the four years' experience of recognition and sequence testing. The last two years' test scores have been added to the main block of results from Years 1 and 2; the two later scores can be compared with the earlier results, the result of two test cards only. The graphs are shown on pages 135 and 136.

It is evident from the almost identical shape of the Control and Pilot schools' graphs that a similar skill is being measured in both cases. The consistently high rate of scoring for the first three phases of the line-graph, that is from fossils through dinosaurs to prehistoric man, is notable, as is the steep climb from grandparents' generations to the present day. These graphs and the Tables on the previous pages appear to confirm the early conclusions of Oakden and Sturt that 'in dealing with historical epochs those which are most remote from our own time are most readily distinguished'. (47)

A predilection for the most remote periods of time is even more convincingly demonstrated by the 'step' graphs. These record the distribution of children's accuracy with individual test items and record all 'runs' scored, from first to last. To the right of the central axis are stepped the percentages of pupils who correctly placed the latest item, then those who were successful with the last two, three, four and so finally, to the four percent who achieved success with the full score of ten correct places. (The central, shaded graph in each case is the sum of the results for the first two years' set of six tests, extended by the 1979 and 1980 follow-up tests.) The greater balance of the pilot school-children's scores is clear, with more successful handling of the earlier periods of time, but a very similar rate of achievement with the four most recent ages. It appears as if the later experience of the last two tests may reveal

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47. 'In dealing with historical epochs those which are most remote from our own time are most readily distinguished.' Oakden and Sturt, op.cit. page 334

more progress made in the 'backwards' sequences than with much extension of the earlier skill with more remote time 'forwards'. In the latter case the control group's development is negligible. (48)

The Borough computer was programmed to retrieve information on 676 pilot schoolchildren who had completed the full series of six recognition and sequence tests during 1976 to 1978. At the end of that sequence, the average age of the children was 9 years 4 months, their average verbal reasoning score was 101 and their average reading age was 9 years six months; there were 361 boys and 315 girls.

These basic data were banked with each child's original scores for the earlier verbal and arithmetical tests devised for the project (49) and the series of six pairs of scores for recognition and sequence. The programme was capable of printing all the children's scores in rank order of their average total mark for the tests series and in sets by school. Certain questions were asked in order to correlate test scores with other abilities and ages.

A five-point category of A to D was devised for the computer to select from the main body of results. 'A' was the category of those children who had an average total of 8, 9 or 10 marks, scored consistently by means of no score lower than 8 in either sequence or recognition. The 'B' group comprised those who had scored only 6 and 7; 'C' included only 3, 4 and 5 and 'D' were those children who achieved only 0, 1 or 2 for every test. These could be identified as consistent scorers. The distribution of all scores was as follows:-

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48. See previous footnote no: 47 on page 137.

49. A sample page of the first computer print-out, in July 1978, is given in Appendix V.

Fig: 14 TABLE OF COMPUTERISED SCORES FOR RECOGNITION
TABLE V. AND SEQUENCE TESTS 1976-78

Average Score	Number of Pupils	Categories			
		Av:CA	Av:RA	Av:VR	
10	1	9.05	13.01	115	
9	2	9.10	12.07	120	A = 8
8	19	9.06	11.08	114	
7	88	9.06	10.10	110	
6	141	9.04	10.06	110	B = 80
5	184	9.04	9.11	103	
4	130	9.03	9.02	97	C = 175
3	72	9.03	8.07	92	
2	32	9.02	6.10	82	
1	7	9.03	5.09	76	D = 19
0	0	-	-	-	
Totals and Averages: 5	676	9.04	9.06	101	

Positive correlation between a higher age-group and a large measure of success with the recognition and sequence tests is very striking. 'This would seem to suggest that the increase in historical understanding is more a function of mental maturation, coupled with the widening of general experience, than of purely formal teaching.' (50)
The average age of the 110 children who scored from 7 to 10 marks on average for the six tests are from two to six months in advance of the group as a whole; 70% of those children who were older than the average of the group scored above average marks for the six recognition tests but only 51% of that over-age group scored above the average for sequencing. Evidently maturity and experience are significant factors which we may expect to see extend their influence in the following two years' tests, possibly with more effect upon the children's increasingly verbal ability than on any 'sense of time'. Certainly the strong correlation of test success with higher

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50. Jahoda G: op.cit. page 97

reading ages is even more consistent, and demonstrates a far wider range of difference than does the eight month average interval in chronological ages; the difference in the average reading ages of those children who scored only one mark on average per test and the boy whose average was a consistent 10 is seven years and four months.

There appears, at the ages of seven to nine-plus, to be a marked difference in the performance of boys and girls; 67% of the boys scored above the average mark of 5 for recognition, whereas only 52% of the firls were in that category. All the 'A' category are boys and 59% of the 'B' set; on the other hand, the proportion of boys in the 'D' category is larger, 53% to the girls' 47%. This strong suggestion of a sexual difference bears out the previous findings of Rogers (51), Congdon (52), Coltham (53) and Henry (54); though Friedman found 'Sex differences... to be statistically insignificant in every case'. (55)

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51. Rogers K.W: Concepts of Time in Secondary School Children of above-average I.Q. Journal of Educational Psychology. Feb. 1967. 'Boys proved significantly superior to girls on the test of the integral concept'.

52. Congdon Peter J: M.A. (London) op.cit: pp. 84-5.

53. Coltham J.B: op.cit. page 35

54. Henry K: M.A. (Liverpool) op.cit. page 201: 'The whole question of a possible sex difference in approach to these tests could well be further investigated.' and page 329, citing Dienes Z: Concept Formation and Personality. Leicester University Press 1959: 'suggests that *there may be a difference between* boys and girls in their approach to conceptual tasks': page 64. See also The Hadow Report (1931) page 53: 'Up to the age of eleven boys showed more independence of thought and greater oral expression.' Girls were seen to have 'a slight precocity in the ability to read and use words' about the ages of six and seven. Towards the age of ten, however, boys tend to outstrip girls, but with the age of puberty girls again develop more rapidly though the boys subsequently overtake the girls in powers of reasoning.

55. Friedman K.C: op.cit. page 341

The relationship of the rank order of scores for recognition and sequencing with previous marks for the specially devised verbal and arithmetical tests is also revealing. It will be remembered (56) that the verbal test set twenty-five problems of 'Earlier and Later' similar to the 'time-word tests' of Oakden and Sturt (57), Bradley (58), Friedman (59) and others. The arithmetic test first set twenty problems with a high verbal content, entitled 'Finding the Age from a Date'; this test having evidently created difficulties of verbal reasoning (the test's average score was 50%, the lowest of any test taken), the same problems were set again after an interval of some weeks as simple subtraction sums, using numbers only, set out in a familiar pattern. Although the fourth, i.e. 'thousands' place-value gave widespread trouble, the group's average for the subtraction test rose to 80%. A place-order test required the ordering of a jumbled set of eight numbers ranging from 8 to 600,000,000; this seemed to test a reasonably well-developed skill at seven-plus. The 'Perspective' test was a crude attempt to compare, if possible, visual perception of sequence and distance in space, as shown in a drawing, with the ability to make sequences of landmarks in historical time. The results of all these tests and their relationship to the recognition and sequence series were as follows:-

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56. See pages 126-128 and Appendix I.
57. Oakden and Sturt: op.cit. pages 311-316.
58. Bradley N.C.: op.cit. pages 68-69.
59. Friedman K.C: op.cit. pages 338-340.

Fig: 15 TABLE OF CORRELATION OF RECOGNITION AND SEQUENCE TESTS WITH VERBAL, ARITHMETIC AND SPATIAL PROBLEMS

TABLE VI.

Rec/Seq. Scores	No. of Pupils	V.R. (Average)	Verbal Problems (Average)	Place Order (Average)	Arithmetic Problems (Average)	Subtraction (Average)	Perspective (Average)
10	1	115	8	10	1	4	7
9	2	120	9	10	8	10	10
8	19	114	9	9	7	9	8
7	88	110	9	9	7	9	8
6	141	110	9	9	6	8	7
5 (Av)	184	103 (Av)	8 (Av)	9	5 (Av)	8 (Av)	7
4	130	97	7	8 (Av)	4	7	6 (Av)
3	72	92	7	8	4	7	4
2	32	82	6	5	2	4	3
1	7	76	4	3	3	5	1
Totals and Averages:							
5	676	101	8	8	5	8	6

Evidently, the battery of six recognition and sequence tests discovered more success amongst those children with above-average verbal reasoning powers, rather than amongst the mathematically gifted. The high correlation of all the 'A' and 'B' groups' scores is not surprising and the perspective picture-test showing 'The Boy at the Window' (60) appears to have some validity. Certainly the mastery of verbal skills is the main demand made of the set of sequence and recognition tests; 100% of the 'A' group scored 8, 9 or 10 for the 'Earlier and Later' exercise. This correlation continues with 89% of the 'B' group, 57% of the 'C' group and 0% of the 'D' group. In contrast only 63% of the 'A' group score as highly on the arithmetical problems, falling to 43% of the 'B' group, 13% of the 'C' group and 0% of the 'D' group.

A further method of correlation was built into the computer programme; it produced a significant result. Basically, the method involved was another mode of relating children's success in Sequencing to their score for Recognition. The relationship is best explained by reference to the diagrams on page 144. These indicate four major 'Zones' quartered by the indices Recognition: Sequence. Zone I matches low scores in Recognition with equally low scores in Sequence, that is, lower than 50% in both cases. Zone II scores above 50% on sequence, below for recognition. Zone III is high on recognition, low on sequence and the 'top' Zone, IV, combined high scores for both skills. The computer can indicate all scores making these different combinations.

Certain 'Areas' were also defined. These diagonal definitions in the diagram (Fig: 16) indicate where the ratio of sequencing skill to that of recognition matches 1:1, exceeds it to a ratio of 2:1 or falls short by 1:2. In other words, the ability to sequence the pictures was either equivalent to the power of recognition; or exceeded it to the extent where, though only one picture was recognized, two were correctly sequenced, or fell short, so that of each two

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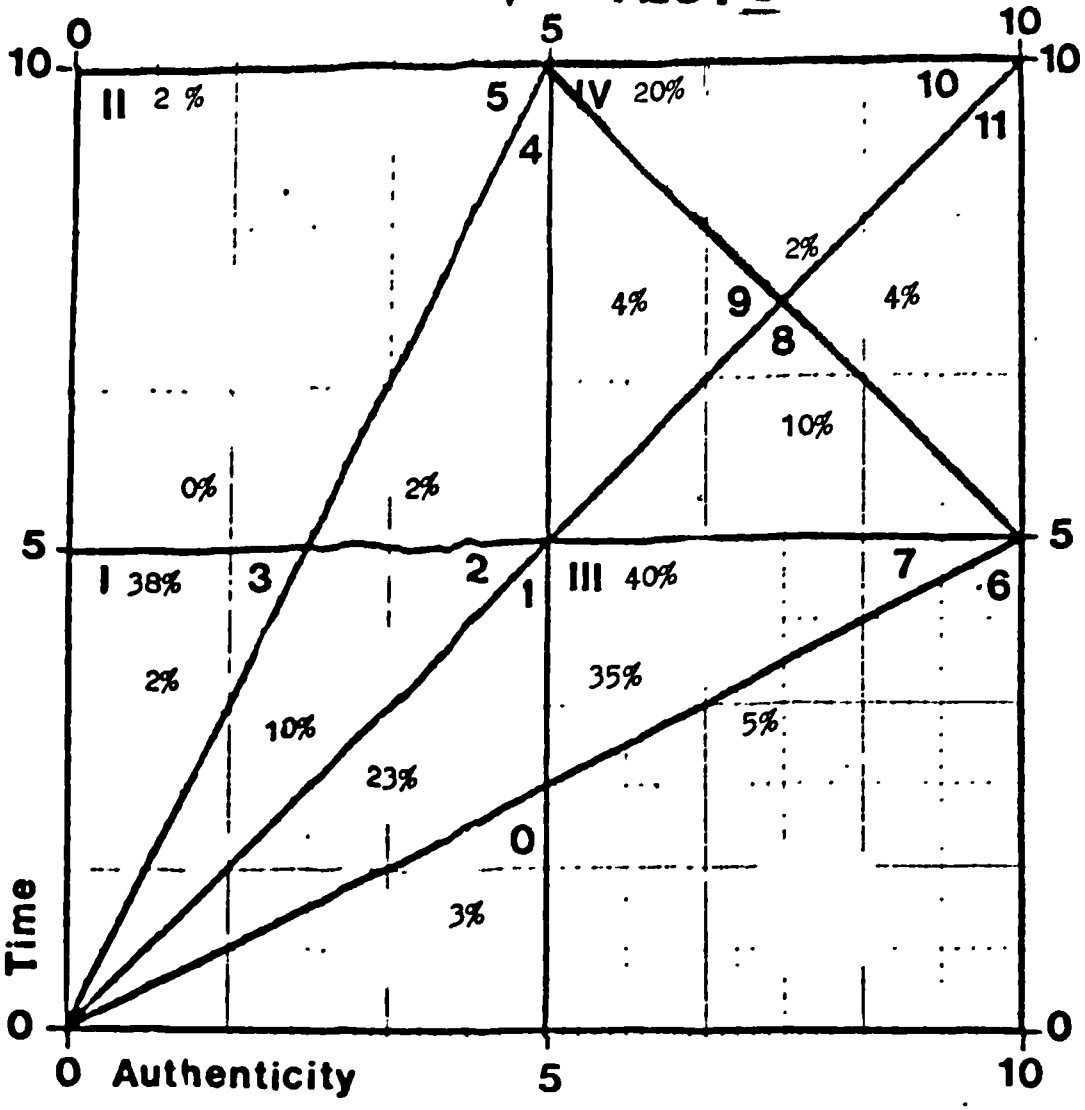
60. See Appendix I Page 386.

Fig: RATIO OF AUTHENTICITY : TIME

SERIATION TESTS



KEY

ZONE I : ZONE OF LOW ABILITY ... 38%

AREA 0 AREA OF DISABILITY AREA 1 : AREA OF LOW ABILITY

AREA 2 : UNUSUAL SEQ. SKILL AND TIME-SENSE AREA 3 : EXCEPTIONAL SEQ. SKILL AND TIME-SENSE

ZONE II : MODERATE ABILITY & TIME-SENSE ..... 2% .....

AREA 4 : SPECIAL SEQ. SKILL AND TIME-SENSE AREA 5 : EXCEPTIONAL SEQ SKILL AND TIME-SENSE

ZONE III : HIGH VERBAL SKILL ..... 40% ....

AREA 6 : HIGH LITERATE ABILITY AREA 7 : EXCEPTIONAL VERBAL SKILL

ZONE IV : ZONE OF EXCELLENCE .. 20% ....

AREA 8 : EXCEPTIONAL VERBAL SKILL AREA 9 : HIGH GENERAL ABILITY

AREA 10 : GIFTED AREA (SEQUENCE) SUPERIOR TIME-SENSE AREA 11 : GIFTED AREA (RECOGNITION) SUPERIOR AUTHENTICITY

figures recognized, only one was correctly placed in time. Thus, insofar as the simple quartering zones give us four areas of low ability, moderate ability, highly literate ability and exceptional verbal ability, so the cross-hatching of the Areas further defines a total of eleven categories. These move from an area of low ability to a pronouncedly gifted area. The pattern identifies areas of exceptional sequencing skill (II) as well as areas of exceptional verbal skill (7). The result, for the pilot schools, are significantly higher in Zones III and IV, the provinces of exceptional verbal skill, than they are in Zone II, where exceptional sequencing skill might have outmatched recognition and description. It is evident that the curriculum followed by the pilot schools had created an advantage more especially in the applied skills of verbal description. It appears that less than a quarter of the sample were disabled from attempting the tests (Area 0-1 = 23%). Of these less able children, 12% found an ability to sequence pictures with an unusual degree of skill which was not related to their verbal weakness.

As to inter-school differences, these are more fully discussed in a later Chapter (61). Here, let it suffice to say that the differences are greater in the ability to recognize and describe the pictures; these range from 5 to 7 points. For sequence, all pilot schools score either 4 or 5 average points. In total, only one school (SS) is significantly different from all the others; this is an 'advantaged' school. Indeed, with the exception of arithmetical skills from school to school, which are very variable, the variation in the different classes' performance in the basic tests, particularly the verbal exercise and the six sequence tests is not as great as the wide discrepancies in different schools' average verbal reasoning scores and mean reading ages.

Certain conclusions could be postulated at the end of the second year's curriculum and testing programme, a convenient half-way point in the project. Firstly, it was evident that children generally, from seven to nine years of

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61. See Chapter Seven pages 272 -280.

age could recognize a wide range of well-established stereotypes of people and objects from the historical past. Those items, referred to in previous research as 'time cues' (62) are extremely widely ranging and occasionally very specific. They vary from fossils to Concorde, from dinosaurs to Elizabeth II, from Pharaohs to spacemen. These time-cues have been assimilated by children from many sources; from lessons in school, from books, comics, television programmes, films, newspapers, family excursions and school trips. The average percentage of successful recognition of such stereotype pictures ranges at about 50-65%, a higher level of success at the age of seven to nine-plus than has previously been recognized. (63) Inevitably, the ability to record a description of what has been identified calls skills other than 'recognition' into use. To demonstrate their familiarity with these items from the past adequately requires a specialized vocabulary; if the skill is to be demonstrated in written form, then aptitude in spelling is also required. The disadvantage of not being able to describe an item confidently and accurately does not necessarily mean that a child does not 'know' it. For 6% of the younger and least able pupils it was usual for their sequencing skill, albeit at a relatively low level of success, to exceed their ability to describe pictures which they had correctly placed in sequence. Repeatedly, weakness in performance with the recognition tests was seen to be the result of immature speech as, for example, 'pimid' (Pyramid) and 'pry minster' (Prime Minister). For certain especially popular or well-known items many children demonstrate considerable ability to identify and describe them in well-defined terms. Thus, what one child sees as 'an army man', to another is 'a grenadier'; tyrannosaurus rex, formula one racing car, Hawker

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62. 'Time-mark': Oakden and Sturt op.cit. page 329
'Time cues': Johoda op. cit. page 90

63. cf. Smith Roya N: The Development of Children's Construction of Historical Duration. Educational Research Vol. 9 No: 3 pages 163-170. Smith found that 82% of a sample of 144 children aged eight to thirteen could provide from three to forty-three items for each of two historical sequences.

jump-jet and trilobite were similar examples of many children's persistent intention to label items accurately; young children prefer a specialized vocabulary for describing interesting things.

The ability to place these time-cues in an ordered chronological sequence is not as well developed as their ability to describe objects which they have recognized. At seven years of age the standard, control group's, ability to sequence from a set of ten items correctly amounts to an average of 33%; this is best demonstrated as the ability to place correctly one item at each end of the scale and one in a precise intermediate position. Most children have very little doubt about the placing of earliest and latest items. In fact, their ability to place the first four items in a series may be superior to their skill in placing the last four. The findings here are at variance with, for example, Friedman's conclusions that: 'a child perceives ideas that are near to him in time and place earlier than he perceives those that are remote' (64) and '.. the child better understands the near in time and place than the remote.' (65) Kathleen Henry too, decided on the basis of her verbal tests that 'the longer temporal spans were the last to be apprehended ..... Even at the age of eleven years the concept of 'century' is not fully established and the ability to deal with remote periods is correspondingly uncertain.' (66) Bradley concluded that 'nine-year olds can comprehend a long period of years' (67); the 'step-graphs' on page 136 appear to confirm that finding and pre-date it. Many children have strong concepts of dinosaurs, fossils, cave-men and Jesus; their partisan insistence on placing any of these first in all time-sequences may cause them some confusion. The idea that 'Christ = Creation', or begins our entire time-scale, not only Anno Domini, is very persistent. Occasionally, failures of vocabulary cause apparent time-errors; for

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64. Friedman K.C: op.cit. page 339
65. Ibid: page 342
66. Henry Kathleen: op.cit. pages 321-22
67. Bradley N.C: op.cit. page 71

example 'fossil' is the wrong choice of word for 'prehistoric tools'. The inability to use a word correctly does not always mean that the experience connoted by the adult use of the word is lacking. (68)

The pilot group demonstrate conclusively that a consistent and deliberate curriculum based on time-line discussions and practice with seriation of objects and stories will increase the child's latent ability to identify and sequence a wide range of historical items accurately. The pilot classes' average total for correct sequencing increased steadily over the first year's tests, that is from the ages of seven to eight years, moving from 30% to 39% to 49%, whilst for the same tests the untrained control group remained consistently at 29%, 30% and 33%. From Test II (Trilobite to Racing car) to Test III (Ammonite to Astronaut), the full range of pilot school scores moved up from 42-71% to 63-80%; in the same interval the control schools improved from 20-52% to 24-68% with the same tests. Those who developed as much as 70-100% accuracy at nine years of age were 16% of our sample. Even a control group, offered no special curriculum but regularly taking tests and discussing these with a teacher, will show considerable improvement of 10-15% over a period of twelve to eighteen months.

Any attempt by an average child at this stage to apply a numerical value in terms of years or centuries to his recognized objects and their correct sequence is doomed to failure. At the very outset of research into children's ability to seriate, Sturt, in 1925, showed how little importance children attached to dates. Children who had seriated the material correctly often got the dates wrong. (69) Oakden and Sturt pointed out in 1922 that difficulties experienced in their tests 'seemed to be partly due to their inability to perform the necessary calculations' (70) and Bradley echoed this decision: 'Arithmetical ability is an

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68. Oakden and Sturt: op.cit. page 310.
69. Sturt Mary: op.cit. page 76.
70. Oakden and Sturt: op.cit. page 314

important factor in the growth of time-knowledge generally .. ..' (71) We have seen that of the entire battery of tested skills, arithmetical reasoning is weakest for the pilot sample. It seems certain that, when some researchers have referred to the child's 'sense of time' they have concentrated on this disability in equating time with numbers. The elementary understanding of simple place-order - in abstract order rather than by calculation-is 80% comprehensible to nine-year olds, so that the idea of 'millions of years' may be easier to assimilate at that age than 'three or four generations' or 'a century'. Certainly the 'middle ages' of the recognition and sequence graphs, from the lifetime of Jesus to the Industrial Revolution, (a period which History books conventionally subdivide into individual centuries) create more problems of comprehension at nine years of age than do the simpler ideas of 'long, long ago' and 'recently'. 'But dates are merely the scaffolding of History and an understanding of them is quite distinct from a knowledge of the characteristics of the different periods which they denote. It seems probable that the power to understand this depends partly on age, even apart from the effects of different methods of teaching.' (72)

Time-charts, though sometimes vaguely deemed to be 'old-fashioned' by teachers, are useful, an aid to children in sorting and ordering the multitude of evidence from the past which confronts them. The time-line with classes aged seven to nine should not be a numerically or rigidly divided scale, but a flexible line of relative verbal points: 'earlier', 'later', 'between' and 'longer or shorter ago'. Trial and error should be admissible; constant discussion is essential. It is certain that seriation of historical evidence is an essential early stage in children's development of their idea of the past. In sorting and ordering those series it may well be that associated skills of language and arithmetic are practiced as much as knowledge of past eras. It may be,

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71. Bradley N.C.: op,cit. page 73

too, that time-sense' in terms of the simplest requirements of seriation is less capable of extension than are the other basic requ rements of the same curriculum; the skill is there however. For some children it is already highly developed at seven to eight years of age and should be used.

CHAPTER FIVE:

PICTURE TESTS OF THE CHILDREN'S SENSE OF AUTHENTICITY AND TIME (JUNE 1978 - JULY 1979) (1)

At the end of the Summer Term in 1978, a new direction was taken in the project's programme by the introduction of a different type of picture test, the first of a series to be set throughout the third year of the project 's duration. There had by then been six main tests of the children's ability to recognise a selection of historical stereotypes and to place them in order of their chronological sequence, as described in the previous chapter. The new test was concerned with the children's ability to perceive authenticity in a narrative picture and to attribute the time of its origin correctly. They would also be required to demonstrate their skill in determining whether a given picture, as either an authentic primary or secondary source of information, was contemporary with the events which it portrayed,or not.

Throughout the scholastic year 1977-78 the pilot schools had already been much concerned with studying a wide range of picture transparencies. Each pilot school had been issued with a set of one hundred coloured slides, copied from a variety of pictorial sources. These pictures were chosen to portray historical scenes and incidents, or particular pictorial sources of information; some were primary sources of evidence, others were of a secondary nature. The collection

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1. This Chapter was introduced to the project teachers as Dudley Education Department Curriculum Bulletin No: 86 in October 1979.

included illustrations of medieval manuscripts, early photographs, narrative paintings, the imagery of the post-impressionists and earlier lithographs. The pictures ranged from Egyptian frescoes to photographs of astronauts walking on the surface of the moon. They were intended, with subsequent additions, to provide four years intensive classroom use. By the end of the school year 1978/79 the slide collection had grown to two hundred pictures in all; these have now been divided for future use in schools into four annual sets of fifty pictures each. (2)

The pilot schools' teachers were asked to make regular opportunities for children to view these slides in groups or as a full class and to spend some additional time each week in guided discussion of some pictures' content and meaning. During the third term of 1978/79 a workbook of questions about each picture was written by the project director and issued from the Teachers' Centre on the basis of one workbook for each fifty slides per pilot pupil. These books were enthusiastically received by the teachers, who reported a similar enthusiasm on the part of the children. The main purpose of the workbook was, if possible, without inhibiting the children's full enjoyment of the pictures, to encourage and assist children to search every picture thoroughly for clues as to its origins and meaning. An attempt was also made to vary the simplicity or difficulty of different sets of questions so that assignments could be chosen, at each class teacher's discretion, to suit all types of children, both the less able and the gifted. It was hoped that the slide collection would take its place alongside the anthology of stories and the collection of museum objects, as another source of historical evidence for continuous use with children from the age of 7-11 or 8-12 years of age.

In order to monitor the children's views of this large collection of pictures, a series of six tests was set

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2. Complete lists of all the slides used from 1979-1980 are given in Dudley LEA's Curriculum Bulletin No: 86. The accompanying workbooks are also numbered Bulletins Nos: 89-92 and the entire collection has a printed Index, which is Dudley Teachers' Centre Resources Bank Item No: 5727 (June 1979)

throughout the school year 1978/79. In the final term of 1977/78 a preliminary test paper was offered to the pilot schools' teachers for their observations and modification. This paper was well received and a few minor changes were made, a process of consultation and modification which continued throughout tests 2-7. It was understood that this new test, by its very practical nature, would be an inconvenient exercise to set in schools, more particularly as it depended upon the amenities available in each school to show a series of three slides to children seated in test conditions. The room must be dark enough to show the slides brightly, but light enough to enable children to read the test paper. Nevertheless, the task was accepted with good will and the trial test, having been taken at the end of the second year by the Pilot classes, was then set to the Control schools; both sets of answers were marked during the Summer Vacation. The preliminary results were satisfactory, so that it was possible to begin the test series in September 1978.

The twenty-one test pictures, which have been reproduced as coloured prints and are filed separately, can be regrouped and classified in several ways (3). In terms of their media, the slides fall into five main sets. There is a group of five photographs (5, 7, 8, 10 and 17); three of these, with the comic (1) are the only black and white pictures in the series; all other pictures are coloured. There are three oil paintings (6, 16 and 18). Four illustrations are taken from modern printed storybooks (4, 9, 13 and 15); five can best be described as modern 'reconstructions' (1, 2, 12, 13 and 21). Only four (3, 11, 14 and 19) can properly be classified as 'historical originals', other than those already described as photographs or paintings.

By reference to the period which they illustrate, either in primary or secondary form, there are, similarly, five different sub-sets. Two pictures are taken from pre-history (11 and 12); five are medieval subjects (2, 6, 9, 12 and 19); four refer to the 16th or 17th century (6, 16,

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3. A full descriptive list of the pictures' titles, subjects and sources is printed in Appendix III on pages 423-6, with black and white copies on all tests.

20 and 21); six are pictures of 19th century scenes (7, 13, 15, 18, 4 and 17) and four are from the 20th century (1, 5, 8 and 10).

Finally, the pictures can be reclassified in one further significant mode: twelve are primary sources (3, 5, 6, 7, 8, 10, 11, 14, 16, 17, 18 and 19); nine are secondary (1, 2, 4, 9, 12, 13, 15, 20 and 21). Thus, all the photographs and paintings are primary sources, as are all four historical originals. These classifications will be seen to exert powerful and peculiar influences upon the children's ability to assess and explain each picture by means of the test paper. They form the basis of several tabulations of the results later in this chapter. (4)

The test paper (5) endeavoured to frame a set of three suitable questions which would test the children's ability to identify the source and nature of each picture and to assess its authenticity, followed by two questions which would test their comprehension of each picture's date of origin, firstly in terms of the events which it purported to portray and secondly as to its actual date of origin. Thus, from the start, the test was aimed at two levels, the time of the picture and the date of its events.

Question 1 invited the children to identify the medium in which they assumed a picture had been made, whether it was a drawing, a painting, a tapestry or a photograph. By the time Test 2 was set, the multiple choices of this question had been extended to include a choice from seventeen original types. Question 2 asked for a description, in one

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4. See Tables VIII - XI; XIV - XV and XVIII - XX.

5. A copy of the test paper in its final form is given in Appendix III on pages
The questions bear some relationship, in intention, to the original Pictorial Identification test devised by Oakden and Sturt in 1922 in Development of a Knowledge of Time in Children: British Journal of Psychology, Vol. XII, Part X, pages 323-327.

sentence if possible, of the picture. This question, broadly comparable with the previous 'Recognition' section on the reverse of the picture sequence tests, demanded the ability to write lucidly and legibly, as well as to discern the picture's literal meaning. The third and last question on the identity of each picture asked the more complex question, a value judgement: 'Do you think that it is a 'true' picture?' Deliberately brief, for the sake of clarity, the question was, evidently, oversimplified. The Comic (1) is a 'true' version of a comic; the scene from the Robin Hood film (2) is a 'true' photograph of an incident on a bridge; the Bayeux Tapestry is certainly the least realistic of the first three pictures. Could the children be expected to answer this question with a simple 'Yes' or 'No'?

As in all other questions, it was debatable whether the form should be as simple and direct as possible, or more carefully and extensively devised at the cost of being more wordy or difficult to interpret. Obviously a careful balance between the taciturn and the otiose was essential. In the event, teachers' advice and children's preference appeared to recommend the more extensive version of a question, preferably with an alternative form of words to explain what was meant. In the last analysis, however, what we require of the child is that, by experience, he should build up his ability and confidence, to return eventually to the simple question: 'Is it a true picture?'. We know that the medieval manuscript is 'true' in a sense that the comic is not; that the Bayeux Tapestry is fact and the Robin Hood film is fiction. Nevertheless, with the benefit of the teachers' advice, Question 3 was extended in Test 2 by adding the additional gloss: 'Does the maker of the picture show us a scene which is as true as a first-hand eyewitness view of the original event would have been? Is the scene genuine, not imaginary?'. To this was added an additional sub-section of the question 'Is it a realistic picture? Do the details seem to be reasonably accurate?'.

The next two questions are concerned with the time elements of each picture. Question 4 was at first simply

phrased as: 'Was the picture made at the same time that the action happened?'. This was, after due consultation, expanded to read: 'Is it a contemporary picture? Was the picture made in the same lifetime as the original event?'.
Question 5 was intended to be explicit enough to offer every possible choice of date, on the basis of the teachers' persistent advice to offer the children more explanation of each question's meaning rather than less. Eight lengthy items, arranged as a complete time-scale, offered a multiplicity of definitions. These were, firstly in terms of age: 'Long, long ago', 'Very, very old' etc. Then each 'box' was entitled by period: 'Prehistoric', Ancient World', 'Twentieth Century', etc. There followed a sentence of explanation: 'Ancient civilizations, before the birth of Christ', 'From Queen Victoria to your great grandparents' birth' and 'Newer than you, made this year, perhaps this week'. Next, each box was numbered with consecutive years or dates:- '5,000,000,000 to 4,000 B.C.' .... '1500 - 1600' .. .. '1900 - 1968' etc. and, finally, a stated duration: 'Millions of years' .... 'Thousands of years' .... 'Hundreds of years' and 'A few weeks or days' was added. These choices, and the demands made upon the nine year old children's ability to read them, may appear at first sight to be daunting. In fact the children appeared to have little difficulty in choosing from so wide a range; one must remember that there were eleven months of increasing classroom experience to make these lengthy definitions familiar.

With each test a trial slide was included as a preliminary exercise to be taken before the three test pictures. Using this, a teacher was regularly able to guide his class through the wording of the test paper, reminding them of the meaning of each choice to be made. The trial slide - intended particularly for the benefit of the less experienced control schools - was accompanied by an answer sheet in explanation of the test's requirements. Teachers could refer to the correct answers question by question, reminding their pupils of the meaning of each choice to be made. The three test slides were then set without any further explanation or discussion.

It was possible for the director of the project to visit each of the pilot schools regularly in order to supervise and assist with the setting of the tests: conditions were found to be generally satisfactory. At one stage in the series doubts arose as to whether some groups might not be seeing the projected pictures as clearly as others. A specific, written enquiry, however, drew no complaint of inadequate equipment or ineffective black-out and visits to schools revealed that all appeared to be well equipped; evidently most schools had recently renewed and improved their audio-visual resources. It was apparent that many Heads were intrigued by the nature of the tests and offered invaluable assistance with projection and explanation of the trial slides. The children adjusted themselves adeptly to the conditions of the tests, working quickly, without unnecessary questions or comment.

The children's aptitude was especially noted at the earliest stage of the test's development, when director and teachers alike were concerned that many children might confuse the test slide with its original picture. One realized that almost all the pictures were at least 'third generation' copies, usually photographed from a convenient book illustration. Thus, one could argue, two of the choices of media listed in Question 1 might repeatedly have been misunderstood, i.e. as inevitably 'photograph' or 'storybook picture'. Similarly, it was anticipated that the essential distinction between the 'event' pictured and the pictorial version might prove confusing. Neither difficulty proved to be persistent; most children distinguished carefully between all three aspects of slide, original picture and 'event'. ('Event' was adopted as a conventional description of all picture-content, even of inactive subjects such as the model dinosaur or unpopulated museum street; this nomenclature was readily adopted in the pilot schools.)

Six picture tests, each comprising an unrecorded trial slide and three test pictures, were set, one test in each half-term of the school year, first to the pilot schools, then to the control group; papers were usually returned

within three or four weeks. Every test paper was marked solely by the director of the project.

In order to apply some measure of objectivity a specific marking scheme was devised for each picture, with certain criteria to be rigidly adhered to in marking. The trial slide's marking scheme was sent with the test papers but the criteria for the three test slides were not divulged to the schools until the papers were returned, marked. All marked papers were returned to the pilot schools during the half term following each test, with a written commentary, in the form of a newsletter on the peculiarities of the test and the relative strengths and weaknesses of the children. (6) Each pilot school was given its own set of averages with the pilot and control group's average totals for comparison. Difficult or controversial points were recapitulated with the group of pilot teachers at regular half-termly meetings in the Teachers' Centre, when complaints of anomaly in the marking of the returned test were thoroughly discussed and, occasionally, amended. Attendance at these meetings was consistently high, usually 100% of the schools being represented.

The allocation of marks to every question in the test was, 0, 1 or 2 points, using two only for those answers which satisfied all prescribed criteria. In the descriptive Question 2, for example, certain words were required as, for example, 'museum' in picture 13; 'model dinosaur' in No. 12; 'Joan of Arc' in No. 9; 'Robin Hood' in picture 2; 'city burning' (1 mark) or 'Fire of London' (2 marks) in No. 16; 'deck', 'cannon' and 'sailing warship' in No. 15; 'Egyptian, Pharaoh, pyramid or tomb' in No. 11; 'modern advertisement' in No. 21. The children's most frequent failing in Question 2 was inadequate expansion of Question 1's choice; for example, having chosen 'museum', to repeat 'It's a museum' in Question 2. Nearly adequate descriptions, at least one required word, were allocated one mark; this 'consolation

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6. Children's Awareness of the Past Newsletters Nos. 1 to 25 dated June, 1976 to June, 1980.

mark' was always awarded to the incorrect dating of period, rather than picture, in Question 5. Thus, for picture No. 13 the Victorian 'box' gained one mark, whereas the correct 'modern' choice was awarded two. Similarly, one mark was given for the incorrect 'prehistoric' date for the dinosaur model, one mark for 'Victorian' in picture 15 and one for 'medieval' in pictures 2 and 9. This makes it possible, later in this Chapter, (7) by counting separately the 1's and 2's, to number those who were deceived by the reconstructions and those who recognized them. Consolation marks were not given in Tests 6 and 7 and it is evident that their loss drastically reduced the marks for Question 5, particularly with pictures 18, 19 and 20.

In Questions 3 and 4 single marks were awarded for sensible use of the 'Can't Tell' choice. In viewing picture 6 no-one could be certain that this painting was a 17th century original and none other: 'Can't Tell' is a reasonable answer. The same is true of the two other paintings, of the sea battle (No. 6) and the coach in a snowdrift (No. 18). A mark for 'Can't Tell' was not awarded for any of the storybook pictures nor the 'reconstructions'. This does not appear to have detracted from the pilot children's correct estimation of the modern date of any of those pictures, neither the non-contemporary nature of all five reconstructions, nor of any of the four storybook pictures. No latitude was offered with the authenticity or date of any of the historical objects.

Regarding the general level of performance, two salient points can be briefly made. Firstly, faced by a complex, demanding, even on occasion a double-dealing test, both groups of children, pilot and controls, performed more than adequately and, in most cases, with evident enjoyment, throughout the series. The averages for the sectional totals, of scores for authenticity (Questions 1 - 3) for time-sense (Questions 4 and 5) and the average total for both sections were commendably high, arguing a high average level of skills and conceptual understanding.

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7. See pages 207-209.

TABLE VII Ranking order of skills in PT (A & T) 1 - 7 (Fig.17). (21 frames in all)

Questions in rank order			Pilot	Control
1st	Q3	Is the picture (a) realistic and (b) authentic?	69%	63%
2nd	Q1	What is the picture medium?	64%	53%
3rd	Q4	Is it a contemporary picture?	58%	53%
4th	Q5	Can you date the picture?	55%	52%
5th	Q2	Describe what you see in the picture	52%	36%
Total for Authenticity Q1 - 3			62%	51%
Total for Time Q4 - 5			56%	52%

It is significant that the main advantage gained by the pilot group from its special curriculum was evident in the literate area of authenticity rather than in the abstract concept of time. As in the Recognition and Sequence tests that advantage is almost consistently about +10% for the Pilot group. With average overall 'time-totals' of 52 and 56% respectively, neither the Control nor the Pilot school children can properly be accused of possessing 'no sense of time'. The test scores indicate once more that, with about +5% advantage to the more experienced group, the children's sense of time is not as susceptible to training and improvement as is their understanding, more highly developed, of a sense of authenticity and identity. In several cases - more particularly in the section about time - the Control group was never by any means totally outclassed by their Pilot school peers; in relative terms the two groups' scores for the twenty-one questions are remarkably close in almost every case. The overall results of both groups can be tabulated as follows:-

TABLE VIII PICTURE TESTS (AUTHENTICITY AND TIME)

(Fig. 18) 1 - 21 : PILOT GROUP (Percentage scores).

TEST	NO.	SUBJECT	AUTH.	TIME	TOTAL
1 *	1	WAR COMIC 1978	70	64	68
	2	ROBIN HOOD FILM 1966	59	54	57
	3	BAYEUX TAPESTRY 1100	68	31	53
2 * *	4	EDWARDIAN SCENE 1978	35	66	47
	5	VIETNAM 1969	54	67	65
	6	SEA BATTLE 1666	59	33	49
3 * *	7	ORVILLE WRIGHT 1903	66	63	65
	8	ASTRONAUT 1969	80	73	77
	9	JOAN'S VOICES 1968	56	72	63
4 * *	10	GERMAN INFANTRY 1916	72	57	66
	11	EGYPTIAN TOMB 4000BC	67	52	61
	12	MODEL DINOSAUR 1978	63	74	67
5 *	13	'EDWARDIAN STREET' 1970	66	73	69
	14	MEDIEVAL MS. 1400	63	47	57
	15	H.M.S. 'VICTORY' 1970	52	73	61
6 * *	16	FIRE OF LONDON 1667	71	28	54
	17	VICTORIAN WEDDING 1890	83	81	82
	18	COACH IN SNOWDRIFT 1825	59	31	48
7 *	19	BATTLE OF CRECY 1346	31	29	30
	20	ENGLISH VILLAGE 1978	50	42	47
	21	HENRY VIII ADVERT 1979	65	71	67
OVERALL AVERAGE			62	56	60

* Denotes a primary source (12 in all)

TABLE IX PICTURE TESTS (AUTHENTICITY AND TIME)

(Fig. 19) 1 - 21 : CONTROL GROUP (Percentage scores)

TEST	NO.	SUBJECT	AUTH.	TIME	TOTAL
1 *	1	WAR COMIC 1978	66	63	65
	2	ROBIN HOOD FILM 1966	56	51	54
	3	BAYEUX TAPESTRY 1100	51	26	40
2 *	4	EDWARDIAN SCENE 1978	32	65	45
	5	VIETNAM 1969	63	69	65
*	6	SEA BATTLE 1666	51	31	43
*	7	ORVILLE WRIGHT 1903	55	64	58
3 *	8	ASTRONAUT 1969	75	75	75
	9	JOAN'S VOICES 1968	45	75	57
*	10	GERMAN INFANTRY 1916	52	49	51
4 *	11	EGYPTIAN TOMB 4000BC	50	34	47
	12	MODEL DINOSAUR 1978	47	70	56
5 *	13	'EDWARDIAN STREET' 1970	49	70	57
	14	MEDIEVAL MS. 1400	48	37	43
	15	H.M.S. 'VICTORY' 1970	37	68	49
*	16	FIRE OF LONDON 1667	64	23	48
6 *	17	VICTORIAN WEDDING 1890	72	67	70
*	18	COACH IN SNOWDRIFT 1825	50	30	42
*	19	BATTLE OF CRECY 1346	24	26	24
7	20	ENGLISH VILLAGE 1978	34	42	37
	21	HENRY VIII ADVERT 1979	47	61	53
OVERALL AVERAGE			51	52	51

* Denotes a primary source (12 in all)

TABLE X PICTURE TESTS (AUTHENTICITY AND TIME) 1 - 21
(Fig. 20) RANK ORDER BY TOTAL : PILOT GROUP (Percentage scores

ORDER	SLIDE	SUBJECT	AUTH	TIME	TOTAL
* 1	17	VICTORIAN WEDDING GROUP	83	81	81
* 2	8	NEIL ARMSTRONG ON MOON 1969	80	73	77
3	18	EDWARDIAN STREET 1960	66	73	69
4	1	WARLORD COMIC 1978	70	64	68
5	12	MODEL DINOSAUR 1978	63	74	67
6	21	HENRY VIII ADVERTISEMENT	66	71	67
* 7	10	GERMAN INFANTRY 1916	72	57	66
* 8	7	ORVILLE WRIGHT 1903	66	63	65
* 9	5	VIETNAM 1969	64	67	65
10	9	JOAN OF ARC 1960	56	72	63
11	15	H.M.S. 'VICTORY' 1968	52	73	61
*12	11	EGYPTIAN TOMB 4000 B.C.	67	52	61
13	2	ROBIN HOOD 1952	59	54	57
*14	14	MEDIEVAL MS. 1400	63	47	57
*15	16	FIRE OF LONDON 1666	71	28	54
*16	3	BAYEUX TAPESTRY C. 1100	68	31	53
*17	6	FOUR DAY SEA BATTLE 1666	9	33	49
*18	18	COACH IN SNOWDRIFT 1840	59	31	48
19	4	EDWARDIAN CHRISTMAS 1978	71	66	47
20	20	TUDOR VILLAGE 1978	50	42	47
*21	19	FROISSART CRECY 1346	31	30	30
AVERAGE			62	56	60

TABLE XI PICTURE TESTS (AUTHENTICITY AND TIME) 1 - 21

(Fig. 21) RANK ORDER BY TOTAL : CONTROL GROUP (Percentage scores)

ORDER	SLIDE	SUBJECT	AUTH	TIME	TOTAL
* 1	8	NEIL ARMSTRONG ON MOON 1969	75	75	75
* 2	17	VICTORIAN WEDDING C. 1890	72	67	70
* 3	5	VIETNAM 1969	63	69	65
4	1	WARLORD COMIC 1978	80	63	65
* 5	7	ORVILLE WRIGHT 1903	55	64	58
6	13	EDWARDIAN STREET 1950	49	70	57
7	9	JOAN OF ARC 1960	45	75	57
8	12	MODEL DINOSAUR 1978	47	70	56
9	2	ROBIN HOOD 1952	56	51	54
10	21	HENRY VIII ADVERT 1978	47	61	53
*11	10	GERMAN INFANTRY 1916	52	49	51
12	15	H.M.S. 'VICTORY' 1968	37	68	49
*13	16	FIRE OF LONDON 1666	64	23	48
*14	11	EGYPTIAN TOMB 4000 B.C.	50	34	47
15	4	EDWARDIAN CHRISTMAS 1977	32	65	45
*16	6	FOUR-DAY SEA BATTLE 1666	51	31	43
*17	14	MEDIEVAL MS. 1400	48	37	43
*18	18	COACH IN SNOWDRIFT 1840	50	30	42
*19	3	BAYEUX TAPESTRY 1100	51	26	40
20	20	TUDOR VILLAGE 1978	34	42	37
*21	19	FROISSART CRECY 1346	24	26	24
AVERAGE			51	52	51

Nine of the Pilot group's first ten slides are in the Control group's first ten and all the Controls' and Pilots' results are within four places of each other. Controls were more highly placed than Pilots on Robin Hood (2), Vietnam (5), Orville Wright (7). In all cases but one, however, the Pilot schools' total scores were greater than those of the Control group's, regardless of relative ordinal placing of particular pictures. For Joan of Arc (9), Astronaut (8), Orville Wright (7) and Vietnam (5), the Control group's scores for time questions were higher than those of the Pilot group's; for the 'Tudor' Village (20); the Pilot and Control groups' scores for 'Time' were equal. In all other scores (37 in all) the Pilot scores exceeded those of the Control group's.

The similarities of the two groups' achievement are also illustrated if we list each set of scores comparatively, combining the averages of all three sections and re-arranging the Pilot schools' ordinal series of success, with a line of demarcation at the level of their median score. The Control group's results, if we accept the convention of +/- one place order of difference only as 'equal', maintain a remarkably close order. Their average scores usually follow at a distance which sometimes ranges from 5 - 30% in favour of the Pilot schools, though in two exceptional cases the Control group's overall performance is superior to that of the Pilot group. Their ordinal placing shows very little difference. Here is the list of the first five pictures for which both groups record above average results for time, authenticity and total:-

1. (Test Slide No. 17) The Victorian Wedding Group Photograph

2. (Test Slide No. 4) The photograph of the American Astronaut on the Moon

3. (Test Slide No. 1) The picture from a 'Warlord' Comic

4. (Test Slide No. 7) The photograph of Orville Wright's aeroplane in flight

5. (Test Slide No. 5) The photograph of an American Marine in Vietnam

The following four pictures also gained above average marks in all three totals for the Pilot schools but were confined to two out of three above-average marks only for the Control pupils:-

6. (Test Slide No. 13) The 'Edwardian' Museum Street Reconstruction
(Control: Time and Total only)

7. (Test Slide No. 12) The Reconstruction of a model 'dinosaur'
(Control: Authenticity and Total only)

8. (Test Slide No. 21) The comic advertisement featuring 'Henry VIII'
(Control: Time and Total only)

9. (Test Slide No. 10) The photograph of German Infantrymen in Action
(Control: Time and Total only)

The next series of four pictures scored above average results in Authenticity only for both groups:-

10. (Test Slide No. 11) The interior of an Egyptian Pharaoh's Tomb

11. (Test Slide No. 14) A page from an original medieval manuscript

12. (Test Slide No. 12) A contemporary painting of the Fire of London

13. (Test Slide No. 3) A frame from the original Bayeux Tapestry

(Control was below average in all sections here)

Two other pictures scored above average marks for both groups in time and total, but not in authenticity:-

14. (Test Slide No. 9) A storybook picture of Joan of Arc's 'Voices'

15. (Test Slide No. 15) A textbook picture of H.M.S. 'Victory's' gun deck

The following picture was above average in time score only, for both groups:-

16. (Test Slide No. 16) The storybook picture of 'An Edwardian Christmas'

Only three pictures gained lower than average scores on all counts for both groups. Failure may have been due to fatigue and a hurried response to the last two tests of a difficult year, or perhaps because of some intrinsic peculiarities in each picture. (This possibility will be discussed more fully later in this Chapter on page 169-71). The three most difficult pictures were:-

17. (Test Slide No. 18) The painting of a stagecoach in a snowdrift

18. (Test Slide No. 20) The storybook picture of a 'Tudor Village' scene

19. (Test Slide No. 19) Froissart's Chronicle; the Battle of Crecy

Finally, two pictures were exceptional in that the Control group's results for each were significantly <u>better</u> than the Pilot schools' attempts; the latter scored below average marks on all counts, whereas in Picture No. 2 the Control schools scored above their own average mark for both authenticity and total, and in the case of Picture No. 6, for authenticity only. These are the two exceptional pictures:-

20. (Test Slide No. 2) The 'still' picture from a film of 'Robin Hood'

21. (Test Slide No. 6) The contemporary painting of the Four-Day Sea Battle

It is a remarkable fact that in several cases an above-average score was made by one group or both, where a major problem was presented by the picture, whereas in other, more straightforward cases the children's average score was lower. Evidently, both groups were most confident in their view of photographs, but the pilot group was more at home with the authenticity - or rather the lack of it - in four of the five 'reconstructions' (order 6 - 9 above) which set the trap of anachronism. In three of those cases the Control group also skilfully avoided the 'time-trap' but failed to appreciate the lack of authenticity. Conversely, all four historical originals were accepted as authentic by the Pilot group (three by the Control) but their periods and dates were not understood. Those pictures which were more successfully dated are three secondary sources (order 14 - 16); many pupils do in fact understand that the storybook picture of St. Joan in 'medieval' times is modern, whereas the 'real' manuscript is genuinely medieval.

Paintings were the least reliable source for both groups; only in the case of Jan Wyck's 'Fire of London' was the realism of the picture fully understood. The painting of the coach in a snowdrift was an unfair example in that both groups saw the picture primarily as a modern Christmas card (which it was) instead of in terms of the card's original painting. The control group appreciated the authenticity of 'The Four-Day Sea Battle' but failed to date it accurately. One must of course remember that an unfamiliar painting may be impossible for anyone but an art specialist to judge, whether it be a Victorian narrative picture or an earlier Dutch master - this skill requires considerable knowledge of painters' techniques or of a picture's genre and period.

Basically, the tests were devised to measure the children's skills in recognition, identification and description of each picture, to establish concepts of authenticity and contemporaneity and to test their skill, or knowledge, in dating the pictures. The primary necessity for children's success with any of these tests was, obviously, clear vision, the ability to see precisely what images each picture offered. This was by no means predictable in all cases. The children appeared to fall into two main categories, those who were acutely observant and those who seemed unable to see the picture as others saw it. It was the growing realization of this second group's disability which led to the written check upon the visual conditions for the test in every school, more specifically on the size and quality of the projected picture. The possibility of faulty projection was not confirmed by the teachers, nor by regular visits to the schools while tests took place. Nevertheless, a small but persistent group of children described details in the picture which they had 'seen' which were certainly not there.

In the course of investigating this disconcerting phenomenon we discovered that in many cases some children concentrated only on one section of a picture, excluding other sections from their view. This could be proved by projecting a 'busy' picture for some moments, then covering half the lens with a card and asking how many children recollected what was portrayed in the now missing half. In every case some children could not remember; another group would miss the other part of the picture if the position of the card were reversed. This failure was more evident with pictures which showed a great deal of crowded detail. The picture of Joan of Arc's vision (9) is a case in point; almost half of one class saw only the kneeling peasant girl, another half saw only the saints. Similarly, in picture 4 a few children concentrated on the people at the exit to the railway station and ignored the standing train completely. Some, looking at the medieval manuscript (14) concentrated entirely on the text, to the exclusion of the marginal and initial pictures, or on

the heraldic shields and nothing else; many did not see the hunting scene. In the coaching picture (18) many children's attention was diverted by the rider in the middle distance, or by a nearly invisible flight of birds in the background of the sky, to the total exclusion of the stranded coach in the foreground. Nor was it merely that they had omitted to mention these 'missing' features in their answer to Question 2. Repeated checking revealed that the pictures were in fact frequently only partially viewed.

More perplexing was the tendency of many children to 'see' people or things in the picture which were not in fact there. The painting of the Fire of London (16) for example, revealed to some children shadowy 'men walking in the fire' - possibly the trees in the foreground. Others saw, in picture 16 'infantry attacking a castle'. The German Infantry (10) were seen as a 'ballet' by one child. The 'Victory's' gun deck (15) was an especial source of visual difficulty. Most faulty descriptions referred to the scene as 'a factory', 'with pipes', to 'a bakery', 'a gasworks', 'a dairy with milk churns', 'a grocer's shop' or 'supermarket' and a 'warehouse with dustbins'. The empty museum street (13) for more than a few children showed 'people walking about'. In the 'Henry VIII' advertisement (21) some children (possibly short-sighted?) confidently referred to a goblet, a beer mug, or a cigar held by the King, or a pipe which he was 'seen' to be smoking.

Occasionally this 'mirage' effect was undoubtedly due to poor reproduction of the colour of the original picture. Several of the less successfully attempted pictures (e.g. 9, 18 and 19) are garish reproductions; all the black and white versions gained above-average results. Particular instances of faulty vision due to unreal coloration are the extract from Froissart's Chronicle (19) seen to portray 'Travellers', 'Chinese' and 'Romans'. To a large number of children, the stage coach (18) was stuck 'in sand dunes', 'in quicksand', 'in swamps' or 'a river'. The tendency for children to fail in their endeavour to explain what a given picture is

supposed to show was more prevalent with the study of story-book pictures than with any other sort of illustration, a salutory lesson to textbook illustrators and teachers who may too readily assume that children appreciate imaginative pictures to illustrate their texts. The highly imaginative view of Joan of Arc's 'Voices' (9) was seen by one child as merely 'a boy what has spilled his porridge!'. There is a necessary skill in looking at pictures carefully which for many children must be taught and learned, practised and encouraged.

On the other hand, the acute powers of observation of many children were equally notable. Few adults will recollect the telephone number of the garage, painted on the wall of the building in the museum street (13); the flock of birds in picture 18 will usually require a second careful search. Occasionally, some close observation was peculiar; in the Victorian Wedding Group (17) 'all the men have moustaches' but 'no-one is smiling'.

A group of teachers in one middle school having invited the project director into school for consultation, seriously challenged the possibility of any success with picture 16 before that test was taken. How indeed, they reasonably asked, could any child be expected to identify the occasion of one particular fire? This doubt under-estimated the general knowledge and skill of most of the children. In the event, the picture provided the third most successful set of descriptions, at a high average of 69%, although it was correctly dated by only 28%. For Question 2 in this case, the strong but simple statement: 'a city burning' was acceptable, at least for one mark. 'Air raids on London' was accepted for a full two marks, though once again very few of the small group who made that choice were then able to date the 'blitz'. Most children believed the Fire to be a Victorian event. The San Francisco Earthquake (1906) and the great Chicago Fire (1871) were given individual credit (the reflection in both cases of television films), but for the majority Wyck's painting was 'The Great Fire of London, which will always be remembered by all English

people' and 'which Pepys wrote about in his diary'. Much of the description of this picture was very graphic; 'it makes the sky look like blood'.

How then, to answer the teachers' initial doubts in the face of actual success? The answer is fairly simple, once the idea of 'a city burning' has been confirmed, for how many cities have historically burned? Nero's Rome, San Francisco, Chicago, Dresden, Hiroshima, the Blitz, could all be accepted unless we assumed that the children's powers of observation would, as many did, produce clues in terms of the shape of the churches' silhouettes or the river in the foreground, thus narrowing their choice.

The inescapable answer is 'general knowledge', a richer store of unrelated items than previous generations of children knew. Nor is it possible to answer, as many teachers will, that this fact and its implications for learning will not apply to the deprived child of a poor family background. Those children will also gain quantities (if not quality) of knowledge from their television viewing, from comic books and classroom projects, even where hobbies, wide reading and family visits are not available. (As witnesses the child referred to on page 173 who did <u>not</u> go to Portsmouth with the school party).

The debt owed to television is predictably extensive; thirty - one per cent of the children responding to regular enquiries as to sources of information offered television or film as their source (8). Even so, the choice of television as the possible medium for any picture was not often used. This would have been an understandable choice for Nos. 2, 8 or 21 and many of the more dramatic pictures, for example No.5, might well have been expected to claim television as their origin. 'Lily Langtry' was in fact identified by a few in

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8. <u>Children's Sources of General Knowledge</u>: Dudley LEA Curriculum Bulletin No: 88 by John West, September 1979, revised in July 1980. The gist of this paper is given in Chapter 8 on pages 334 - 341.

Slide 17, the wedding group, and 'Dick Turpin' as the reason for the stranded coach, which was evidently 'hi-jacked, ambushed or the victim of a stick-up'. Such borrowing from recent television series was rare, however. Picture 18 lost more children marks by their identification of the scene as a Christmas card than as a televised incident.

Frequently, close observation was followed by equally adept deduction. The German soldiers (10) it appears, are carrying 'old-fashioned long rifles' and wearing steel helmets 'with a deeper rim at the back of their neck than in the Second World War'; they bear 'large amounts of luggage' which is also indicative of an early date; 'modern soldiers' equipment is smaller and smoother'. These clues, for about 25% of the pilot sample, established a firm World War One image: in the Second World War, according to children whose interests include miniature soldier making, war games and war comics, or who have talkative fathers and grandfathers, rifles were shorter (possibly 'a carbine'), the German helmet more closely fitting and the soldiers' equipment more compact.

The Edwardian Street (13) was, to 51% of the pilot group, not contemporary but reconstructed inside a modern museum because: 'the photograph is coloured', 'the paving stones are clean', 'there are no customers or servers in the shop and garage', 'the cars and bicycles have been 'put out to be seen, not used' and 'the light is too yellow for daylight; it's electric'.

Occasionally, specific knowledge of a period or an event, though not essential for full marks, was certainly an advantage. Such knowledge was occasionally the outcome of an influential class project, a school visit, or a story read by a teacher. Thus, the Fire of London (16) was identified by two or three whole classes with details of Pudding Lane, the Stuart King, the foregoing Plague and Pepys' Diary. One school trip had visited the 'Victory': a moving response was that of a child who had been unable to accompany this trip but recognised the gun-deck 'from how his friends described it'

on their return. This is another striking example of how effective verbal description can be in creating visual images in children's minds (see also the instance of the Philistine on page 339). The Tudor style of half-timbered buildings was a valuable feature of Slide No. 20, otherwise a rather difficult, indefinite scene. Surprisingly, in these, and moreso in later picture tests, the fashions of people's clothes do not appear to have been reliably or consistently used, as perceived by Oakden and Sturt (9) as 'marks of a period'. This is disappointing in view of the possibilities of experiences of changing fashion offered by the collection of 200 coloured transparencies throughout the curriculum of the project. The wide range of the children's many experiences, visits and 'time-cues' is more closely analysed elsewhere (10). Analysis reveals that 65% of the children's 'cues' were from home sources, compared with 35% from school.

As in the case of the earlier tests on Sequence and Recognition, the child's ability to describe in words what he saw in a picture was a major demand of this test. It was also (see Table VII) the area of greatest weakness, particularly in the Control group, whose lowest average mark of all (36%) was scored in Question 2. The Pilot schools were more successful (52%) but this is also their lowest score. It is abundantly clear that it is here, in the linguistic skills of verbal description, that teachers in the Pilot schools have been able to gain most advantage from the prescribed curriculum. It was encouraging to detect the increasing maturity of the children in their vocabulary and sentence structures which, in many cases, have become very precise indeed. Picture No. 15 for example discovered those pupils who appreciated the difference between 'boat' and 'ship', between 'the lower deck, the gun deck or below decks' and 'the bottom of the ship'

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9. Oakden E.C. and Sturt M. : Development of a Knowledge of Time in Children. British Journal of Psychology, Vol. XII, Part 4 1929, pages 319 and 327.

10. See pages 334 - 341.

'underneath', 'the basement' or 'downstairs'. The necessary distinction between 'coach', more particularly 'stage coach' or 'mail coach' and 'horse and cart' was an equally important feature in marking Slide No. 18.

A general improvement in descriptive answers was noted in the Newsletter to the teachers which referred to Picture Test 3 (11). This acknowledged that the written descriptions of Slide 7 (Orville Wright) and Slide 8 (American Astronaut) were significantly improved ..... 'here we see a far more confident use of vocabulary and sentence structures'. Indeed, confirmation of this stage of improvement is found in the fact that eight of the twelve above-average results for Question 2 were provided by slides in the second half of the series, i.e. Pictures 10 - 21, whilst five of the nine below average results were from earlier pictures (1, 2, 4, 5 and 9). The Pilot group's overall advantage over the less experienced Control group was greatest for description, being +16% on average. A succinct sentence such as 'The picture (7) depicts a group of Victorian people watching the Wright brothers flying their first aeroplane' is reasonably typical of progress made by the Pilot pupils in the third year of the project.

The major weakness in test performance, even for many who demonstrated more skill in the multiple choice questions, was that of an inadequate vocabulary or an inept turn of phrase. Many children then at ten years of age, in both Pilot and Control groups alike, continually repeated the 'weak' words of seven and eight year olds. (see pages 23-24 for the earlier examples). Typically inexpressive words used included 'some' as in 'some men', 'some kind of .....', 'someone' or 'something', as in 'someone praying to someone', or 'some men fighting some other men'. There was too often a casual, indefinite use of the words 'old', 'old-fashioned', 'olden days', 'a lot' and 'like', as in 'a lot of like houses' for the Tudor village scene (20); of 'funny' as in 'funny old clothes'; a 'lady' as applied to Joan of Arc, Saint Margaret

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11. Children's Awareness of the Past Project Newsletter No: 14 January 1979

or an Egyptian mummy. We found repeated use of the word 'people' or 'man'; a few children are capable still, at 10+ of applying 'some men (or a man) fighting some other men (or another man)' to every one of Pictures 1, 2, 3, 6 ('some ships fighting some other ships'), 10 and 19. We find repeated use of 'rich' and 'posh'; the Victorian wedding was taken by many to be a royal wedding, or certainly of very 'posh' people.

Evidently, the problem of the immature child, and for his teacher, is the one-word vocabulary. In this linguistic strait-jacket, for some ten-year-old children 'picture' is their only word for a painting, a diagram, a photograph, a lithograph, a cartoon, a water colour, a sketch or a line drawing. A 'man' may be an astronaut ('a man in a funny hat') or an admiral, an infantryman or a knight. At ten years of age 'soldier' is no longer adequately descriptive, when at the more mature end of the ten-year old scale we can expect to find 'an Assyrian Warrior', 'an American Marine', 'German Infantrymen' or even 'a Prussian Grenadier'. 'A man' will not suffice for Robin Hood or an archangel. For one child Picture No. 9 revealed 'two angles round someone round a sort of sun-thing'.

The problem of inadequate vocabulary and a restricted code of language is an emotive matter for many teachers. They see the problem as the inevitable - almost inescapable - result of a poor socio-economic background, a deprived home and certain inherent, probably irreversible intellectual limitations. At an I.L.E.A. in-service training course which reviewed the project, a young teacher put forward, forcefully, the view that 'we cannot expect all children to use these 'stronger' words - they are not all of the same ability'. To such teachers, and they are many, criticism of a 'poor' child's vocabulary is insulting and unproductive. In response one must draw attention to those everyday occasions on which an advanced technical or specialized vocabulary is commonplace (as in the special cases, for the children, of astronauts and dinosaurs). Many non-academic children assume quite naturally the specialized vocabulary of the football fan, the aeroplane spotter, the ballet class, the needlewoman, the pony club,

the bottle collector or, in later life of the plumber, the electrician, the motor mechanic or the computer clerk. There is evidently an educational controversy here, which should be resolved, about the possibilities of 'giving' a child, by means of skilful teaching and adequate experience, various vocabularies suitable for different purposes. (12)

Certainly, the specialized vocabulary of our own project has grown considerably with the children's prolonged study of pictures. Such useful words as 'depicts', 'represents', 'foreground', 'Victorian', 'medieval', 'tapestry', 'manuscript', 'reproduction', 'model', 'contemporary' and 'authentic' now come readily to the minds of many Pilot school children. Similarly, the skilful use of 'possibly' ('German infantry soldiers, possibly of the First World War'), the subtle difference between 'real' and 'realistic', between 'contemporary' and 'modern', between 'picture' and 'painting', all these and many more expressions are now used with discrimination by many otherwise 'average' children.

The answers to Question 1, 'What sort of original picture is the slide taken from?' provided the most uniform response by both groups, with the Pilot schools' average, overall, of 64%. (13) The children are adept at understanding different pictorial media; many of them refer confidently to 'clips' of cine-film; they distinguish carefully between colour film or black-and-white, between still and moving film; they appreciate the difference between a model and a two dimensional picture.

As a result of in-service training, discussion and post-test consultation, both in the classroom with the children and in the Teachers' Centre with discussion groups, the elementary definitions of 'original' and of the 'event' portrayed by a picture were fully developed from the start.

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12 A Language for Life: Bullock, Sir Alan. A Language for Life. Dept. Ed.& Science. HMSO. 1975. 11.20-11.24 pages 171-173

13 See Table VII on page 160

Answers to Question 4 depend entirely upon the adequate acquisition of that concept. Although most teachers expressed concern at one time or another about the difficult concept of 'authenticity', this has proved by reference to the overall test results to have been well understood, not only by the Pilot group (with an overall result of 69% for Question 3) but also, commendably, by the Control schools (at 63%). The 6% advantage to the Pilot group is no doubt due to the extra care and attention given to this unfamiliar idea by teachers and children alike, but is also well developed in the less experienced group's thinking. The more familiar problem of children and time was less frequently discussed by teachers throughout our meetings. Consequently, perhaps, the overall averages for scores on Questions 4 and 5, the 'time questions' though adequate at 52 - 58% are not as high as the Pilot's score for authenticity questions. That long lead was largely gained by the Pilot school children's considerable superiority in their ability to describe the picture in Question 2.

Question by question, the Pilot group's advantage, gained by extra practice and some familiarity with the type of pictures used in the tests was, for Question 1 on media: +11% (64: 53%); for Question 2 on recognition and written description +16% (52: 36%); for Question 3 on realism and authenticity: +6% (69: 63%); for Question 4 on contemporaneity: +5% (58: 53%) and for Question 5 on specific dating only +3% (55: 52%). Thus, the Pilot schools' relative advantage was on questions of Authenticity (1 - 3: +11% (62: 51%) and on questions of Time (4 - 5) only 4% (56: 52%). As to total averages, the Pilot schools' overall average was +9% (60: 51%).

For each test there were, as before, differences of attainment from school to school. (14) It was inevitable

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14. The individual schools' results for these tests are tabulated as an abstract in Chapter V pages 161-164 and are given in full as Tables in Appendix III on pages 440 - 462.

that the best of the Control schools might well exceed the results of the least able Pilot schools. The 'overlap' at 30 - 50% in some schools' cases is noticeable though these reversals are not as numerous as they had been in the previous year's sequence tests: usually for the authenticity tests the anomalies are no more than one or two per test picture. Compare, for instance, in the first test, the very low mark of AA (F) for Picture 3, contrasted against 68% for Control School KL. Pilot School XX's totals (Picture No. 6 for example) are repeatedly lower than Control School JJ, and Pilot School VV's 53% for Picture No. 9 is far less than School OV's score for the same test. At intervals throughout the third year, as during the previous years' tests, it was occasionally debated whether to remove the persistently low-scoring schools from the Pilot sample but, as before, this was considered to be undesirable, partly in view of the genuine efforts which were being made by the least able classes, partly to preserve a true cross-section of the sample. The fundamental reasons for these school-to-school deficiencies will certainly appear from the calculations of the computer in due course. (15) Already it is evident that some of the least advantaged schools (e.g. XX and DD) have not only revealed a few of the most gifted individual children by this battery of tests, but persistently improved their average scores over the full duration of the project.

Nor can we denigrate the efforts of the Control group, who regularly took the tests with no additional assistance; for individual questions on particular pictures their results repeatedly rival the Pilot schools' achievements. Advantage to the Control schools is particularly achieved in relation to time questions as, for example, the Control group's results for Question 4 on the contemporary nature of the photographs from Vietnam (5) and the Moon (8). In answer to Question 5, on more precise dating, the Control group's advantage is even greater for those two pictures and for the photograph of Orville Wright in flight. Totalling the 'time' answers (to

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15. See Chapter Seven.

Questions 4 and 5), the storybook picture of Joan of Arc (9) is also to the Control group's advantage. In appreciation of media (Question 1), the Control group's marks for the Comic (1) and Robin Hood (2) are marginally superior. As to authenticity, in the answer to Question 3, they exceed the Pilot schools' marks on the Vietnamese scene (+8%), on the film of Robin Hood (+2%), the storybook picture of an Edwardian Christmas Visit (+10%) and the painted seascape (+6%). In two cases, Pictures Nos. 4 and 5, the Control group's advantage is as high as 8 - 10%. Frequently, too, the order of success with particular pictures is almost exactly equal, as, for example, both groups' remarkably similar results in their identification of media, from the 'Warlord' comic at 93 - 94% respectively, to the Froissart picture of Crecy at 4 - 10%. Picture by picture, all but the Pharaoh's tomb (11) and the 'Tudor' village (20) are scored in almost identical order, frequently with no more than 2 - 5 marks between each group.

A similar proximity is noted in the answers to Question 4 on contemporaneity, where the order of success is relatively equally spaced across 80 odd marks. The Control's marks are equal to, or within five marks of, the Pilot schools in 17 of the 21 pictures. Mainly by reference to three slides, the Medieval Manuscript with the Pilot group's lead of +20%, the German Infantry at +10% and the Pharaoh's tomb at 33% is the Pilot group's overall advantage decisively confirmed for this particular question.

The problems of authenticity raised by Question 3 caused continuing consternation among the Pilot group's teachers, even though there were some reassuring early successes in this field (Picture 1, Question 3 = 83%; Picture 5 = 75%; Picture 7 = 78% and Picture 8 = 79%). With some later exceptions (Picture 18 = 38% and Picture 19 = 43%) there is an evident improvement in the answers to Question 3 as the tests progress. Seven of the twelve above-average responses to this question are from Tests 4 - 7; the final overall score for authenticity at 69% was highest of all.

Indubitably the considerable thought and discussion of this question by the teachers proved to be productive of greater confidence among the children.

This idea had been, however, an unfamiliar one at the outset. A young teacher remarked: 'I never realized before we developed this project that children of nine years of age have no idea of any one picture being more authentic than another. To my class any picture is as credible as any other'. Certainly, our own ideas of what we meant by 'authentic' underwent continual review. By the time Test 3 was set it had been agreed, in view of the children's continual querying of the meaning of 'a true picture', to expand the question by offering two slightly different questions. For all future tests the question was divided to ask (a) 'Is it a realistic picture? Do the details seem to be reasonably accurate?' and (b) 'Is it an authentic picture? Does the maker of the picture show us a scene which is as true as a first-hand eye-witness of the original event would have been? Is the scene genuine, not imaginary?'. It was understood at the time that these are really three different questions, not alternative versions of the same question; yet the additional choices appeared to satisfy the needs of both teachers and pupils for the time being.

'Realistic' was at first confused by the children with 'real'. With reference to the dinosaur the children could be helped to see the difference, in discussion after the test, between the two different questions: 'Is it a realistic model?' and 'Is it a real dinosaur?'. The difference continued to raise difficulties and continuing discussion was essential. For example, the final picture of the series, the cartoon features of Henry VIII and his wives portrayed by the advertisement (Picture No. 21) are 'realistic' enough to be easily recognised. The dinosaur model too can surely be assumed to be even more than 'reasonably accurate': as one boy wrote: 'It was probably made by using real bones'. On the other hand, few pictures are less 'realistic' than the originals of medieval manuscripts' illustration. One boy wrote

of the contemporary illustration of Crecy (Picture No. 19) 'It's a medieval battle, the picture is out of scale'. Thus we may have to deal with confusion in familiarizing the children with the idea that 'if an illustration of a medieval scene looks unrealistic, it is possibly authentic'.

The dinosaur was, presumably, modelled by experts qualified in archaeology or museum service; the museum reconstruction of an Edwardian Street is certainly correct in all its details; the textbook illustration of the 'Victory's' gundeck is taken from a reliable standard work on wooden ships; we can certainly assume that the author is an authority on men o' war. Are we then to teach children that any semi-official version of a scene, reproduced by reputable museum curators, textbook illustrators or official photographers can be uncritically accepted? This idea would certainly not satisfy the Pilot pupils. There is an opposite, counter-productive trend in this type of investigation with young children, which may, if not guarded against, produce classes of hypercritical scrutineers who will accept nothing at face value and thus fail to appreciate any genuine article. This attitude, readily adopted by many of the Pilot group, may be helpful in viewing ephemera, such as the comic (1), the advertisement(2) or a propaganda photograph (5) but is much less relevant in appreciating the accuracy of detail in the museum street (13), the Pharaoh's tomb (11) or the model dinosaur (12). For these last examples the children did, in fact, score higher than average marks for authenticity and the authenticity of all historical originals but one gained high marks in Question 3, ranging from 63 - 68%. Only the illustration from Froissart was completely misunderstood.

In endeavouring to find a satisfactory form of words to convince children of the authenticity of any item, we may find that language is a two-edged weapon. For many pictures the persistent question: 'But is it <u>really</u> a dinosaur?'; 'Is the comic <u>really</u> a true version of a war which happened thirty years ago?' or 'Is that <u>really</u> an astronaut, or Joan of Arc, or Henry VIII?' will usually work well towards the

children's understanding. To establish the authenticity of the oil paintings such simple interrogation is inadequate. The picture of the Sea Battle or the Fire of London could as well be imaginative storybook pictures. To ask the children if the knights in the Bayeux Tapestry are 'realistic' could mislead them: their failure to establish the 'reality' of the scene from Crecy was disastrous. These figures do not in fact look as 'real' knights do in storybook or post-impressionist imagery. One can only hope that increasing familiarity with medieval pictures will improve the children's understanding and thus their skill. We must face the fact that apart from 'authentic' there is no other word which explains the concept of authenticity as well. 'Realistic', 'official', 'true', 'factual', 'accurate' or 'convincing' are all more or less approximate; none is, in the full sense, 'authentic'. The computerised mark books will indicate (16) that for a proportion of individual children at this age this understanding is already very well developed. Totals and averages of an entire sample, useful though those averages are, fail to give as sensible a picture of <u>each</u> child's individual ability as the computer.

What then is our definition of 'authentic' to be? All the arguments which can be used to condemn a 1978 comic strip cartoon of the American War of 1942 in the Pacific as 'not authentic' could justifiably be levelled against the Bayeux Tapestry. Certainly we cannot take a wrong way out of this problem by simply stating 'contemporary = authentic'. The question is best resolved in continuing discussion with the children. A form of words is often useful to experiment with ideas and alternatives but continually we will find that these linguistic formulae turn in our hands. 'Is the picture more likely to be true or untrue?' begs the question.

As the children as yet have no realisation of the 'official' picture, of the importance, for example, of NASA

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16. See Chapter Eight

as the best informed western source of information about space travel, of the proximity of the official war correspondent to the action, of the specialised knowledge of naval architects and marine painters or the relative veracity of the paintings of regimental historians, we must begin to build up this experience. Over-imaginative views which amount to fiction, or even fantasy, are more easily dealt with. It is relatively straightforward to answer 'No' in relation to the comic's veracity, or to the highly coloured storybook version of Joan's voices. There is, however, a constant danger in the child's readiness to accept a striking fictional version as 'true' even in the full knowledge that he is dealing with fiction. He is accustomed to the idea that storybook, film, television and museum have some authority, in his view. He knows them to be contemporary in the sense of 'up to the minute'. He appreciates the authentic quality of the manuscript and the tomb only in the same way that he admires the realism of the western or the war film.

It is not the authenticity of the primary source which defeats the child, but his inability to grasp, in every case, the significance of its contemporary nature. It is interesting to observe the difference between the children's gradual acceptance of the unfamiliar idea 'authentic' compared with their continuing failure to assimilate the equally unfamiliar idea of 'contemporary'.

In the listing of priorities of scoring, (17) eight of the twelve primary sources are placed in Question 3 between first and twelfth in the above-average order (70 - 92%), whereas answers to Question 4 completely reverse this appreciation of the originals: every one of those contemporary items which receives a below average time-score (Order 13 - 21: Scores 12 - 57%) is a primary source. Only three primary sources, all photographs, pass the test of contemporaneity. Yet the children recognise the contemporary source for what it is (Question 1) more readily than in the case with secondary sources. All but three of twelve, (7: Orville Wright; 11: Pharaoh's tomb; and 19: Froissart's Chronicle) were

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17. See Tables X and XI on pages 163 -164.

recognised by more than 64% of the children, whereas only three of the nine secondary sources gained above average marks. These were: the Comic (1); the Robin Hood film (2); and the storybook picture of Joan of Arc (9). Tapestry and manuscript were recognised by more than 64%.

The idea of 'contemporary' illustration, was from the first the most difficult idea for the children to accept. Some thought that it must mean 'instantaneous' - as, in fact, all the photographs were. The tapestry, they felt, could be 'contemporary' only if it had been stitched on the field of Hastings; a 'contemporary' seascape must be painted by the gundeck artist of a ship in action. Although this idea was patiently explained, from test to test by the class teachers, there is a dramatic division in the appreciation of contemporary works. We find that every one of those pictures which required the answer 'No' to Question 4 was correctly estimated as non-contemporary by more than the average 58% of pupils; their marks range from 60 - 90%. On the other hand, every one of these pictures which gained fewer than average marks were those to which the answer 'Yes' was essential. These, the truly contemporary pictures, paintings, tapestry, manuscripts and hieroglyphics, all failed to establish their contemporary nature with the majority of children even where their authenticity was fully appreciated.

Evidently, this result could have been achieved by a mere assumption on the pupil's part that 'contemporary' means 'modern' as in the up-to-date catalogues of a furniture showroom. Alternatively, a similar result might have been achieved by the majority of children answering a firm 'no' as the inevitable answer to Question 4 in every case. A close examination of all the score sheets reveals some measure of truth in this argument.

The first supposition, that the children failed to distinguish between 'contemporary' and 'modern' was not borne out in a careful re-count of all individual answers to Question 4. Otherwise, the very first picture of the series,

the 'modern' comic, would have received a majority of 'Yes' responses, whereas, in fact, only 67%control pupils and 73%pilot children answered 'Yes'. Faced with the astronaut the children's responses were almost literally halved between 'Yes' and 'No' (299: 276 Controls and 341: 341 Pilots). If 'contemporary' had been used in the false sense of 'modern' the Henry VIII advertisement (21), which was taken from the last month's colour supplement, might not have received so overwhelming a response of 'Yes' (479 Control and 541 Pilot). Rephrasing the question, falsely, as 'Is the scene you see a modern subject?' would indeed account for the children's 65 - 68% success with the Robin Hood film (2) and their failure with the next picture (3) of the Bayeux Tapestry, the Four-Day Sea Battle (4) or the Astronaut (8). It would then be difficult to account for the correct turn to 'Yes' for Orville Wright's Flight of 1903 by more than half of the Pilot children (50%), though less so for the Control (48%). 'Is it a modern scene?' scored a 'No' (84 - 85%) for the non-contemporary test book picture of Joan of Arc as for all the other story book versions (Nos: 4, 15 and 20). In terms of average class and group scores, the only 'old' scenes, nevertheless contemporary, with which the Pilot group demonstrated any success were Orville Wright (50%), the Medieval manuscript (50%) and the Wedding Photograph (85%). These are five of the twelve contemporary choices. The Control group, however, scored below 50% for all but the Wedding Photograph in this group. In other 'old-fashioned' cases both groups' scores were low: 11 - 14% for the Tapestry, 7 - 12% for the Seascape, 12 - 16% for Froissart, 18% each for the stranded stage coach, 25 - 28% for the Fire of London. Only with those modern pictures which are both 'modern' and 'contemporary' were both groups' interpretation of this question favourable, as, for example, the Vietnam incident (61 and 63%), the astronaut (61 and 63%) and Orville Wright's flight (48 - 50%).

It could be argued that here we perceive a general improvement in the more experienced Pilot group's interpretation of Question 4. We have seen them, in the most difficult cases, exceeding the Control group's scores by at least 10% - a significant +26% lead in the case of the Egyptian Tomb.

These cases are all the more important when we see, in further analysis of the 'time' questions, a more constant, fundamental fixety of scoring. Other aspects of these scores would lead us to a view that the Pilot group's extra curriculum, more particularly in its careful and persistent attention to classroom time charts, had proved incapable of extending the Pilot group's ability in 'handling' time to any significant degree. Not only do the time scores at least correspond to the 3 - 5% average difference in both groups' scores for Questions 4 and 5 but also the similarity between individual schools and separate groups remains relatively constant through a wider range of scores.

Could the scores for these two questions, more particularly that of contemporaneity, have been subverted by guesswork in response to an incomprehensible word? Certainly there was an evident tendency, when in doubt, to answer 'No'. This would have led to an even lower level of failures with this question than we have already perceived, as twelve of the items used demanded the answer 'Yes', whilst only nine required 'No'. Those pictures which failed to receive a majority of 'Yes' responses are once again those which failed the 'modern or contemporary' challenge. These are the Tapestry (3), the painting of the Sea Battle (6), the painting of the Great Fire (16), the painting of the Stage Coach (18) and Froissart's Chronicle (19). The Control group might, here again, be more guilty of 'No-guessing' as this answer reduced their success rate below that of the Pilot group in the further cases of the German Infantry (7), the Egyptian Tomb (11) and the Medieval Manuscript (14). We have already considered the difficulty of simple decision on the question of any painting's contemporary nature. Otherwise the Pilot group could not be held to have answered 'No' to the detriment of 'Yes' pictures, but the Control group might not be able to escape that challenge.

Certainly there was a preponderance of 'No' responses from most children in both groups in a series where the balance lay in favour of 'Yes'. Effectively, 57% of the answers to Question 4 should have been 'Yes' and 43% 'No'.

In fact, the Control group returned 8,702 'Noes' (70%) and 3,775 'Yeses' (30%); the Pilot group offered 9,525 'No' answers (67%) and 4,754 (33%) 'Yes'.

The net result of this imbalance resulted in 10% of the Control group's answers being inaccurate 'Yeses' and 37% being inaccurate 'Noes'. For the Pilot group the score was not so very different: 9% were inaccurate 'Yeses' and 33% inaccurate 'Noes'. The full span of answers to Question 4 on the 'contemporary' nature of each picture can best be tabulated as follows:-

TABLE XII CHILDREN'S ANSWERS TO QUESTION 4
(Fig. 22)

		'YES'			'NO'		
		Correct	Incorrect	Total	Correct	Incorrect	Total
PILOT GROUP	14289 choices	24%	9%	33%	34%	33%	67%
CONTROL GROUP	12477 choices	20%	10%	30%	33%	37%	70%

Here is one of the clearest indicators that, in terms of the 'time questions', little has been done to change the Pilot group's pattern of responses from the norm by means of a special curriculum. Nor do we discern any significant change in this pattern during the course of the school year's work and tests. To check this, the list of 21 test pictures was divided at the first twelve pictures, the last six pictures and the last three pictures and the ratio of 'Yes' and 'No' responses, both correct and incorrect, was once again recorded, thus:

TABLE XIII (Fig. 23) PROGRESSION OF 'RIGHT' AND 'WRONG' ANSWERS TO QUESTIONS 4 AND 5

	PICTURES 1 - 12						PICTURES 13 - 21					
	YES (7)			NO (5)			YES (5)			NO (4)		
	R = RIGHT			W = WRONG			T = TOTAL					
	R	W	T	R	W	T	R	W	T	R	W	T
PILOT	25	8	33%	34	33	67%	22	11	33%	33	34	67%
CONTROL	21	9	30%	33	37	70%	18	12	30%	32	38	70%

	PICTURES 16 - 21						PICTURES 19 - 21					
	YES (4)			NO (2)			YES (1)			NO (2)		
	R = RIGHT			W = WRONG			T = TOTAL					
	R	W	T	R	W	T	R	W	T	R	W	T
PILOT	25	8	33%	24	43	67%	5	16	21%	51	28	79%
CONTROL	22	9	31%	25	44	69%	5	17	22%	49	27	78%

(Numbers in brackets indicate the number of correct YES/NO answers required by the set of test pictures).

Here the last three pictures are almost certainly too limited in scope to indicate a real trend to superior performange on 'No' answers, which is not otherwise indicated.

Failure to establish a valid concept of 'contemporary' sources can also be demonstrated by the simple test of comparing the combined answers of Questions 4 and 5, for these should evidently match. A child who answers that a dinosaur model is not contemporary with the dinosaur, as did 89% of the Pilot group, confirms his comprehension of this idea only if, on turning the page, he answers Question 5 by choosing 'Modern' as the picture's date. As one Headmaster remarked during the discussion of this test: 'It takes a lot of nerve for a nine-year-old child to attach any date other than

'prehistoric' to a dinosaur, whatever the picture is'. There is a great deal of truth in this view, and one suspects it is an attitude which many of the teachers would have shared had they attempted the test.

In fact, both scores for Questions 4 and 5 were above average though diminishing from a dramatic 90% ('dinosaurs' - 'contemporary' - certainly not!) to a far less certain 59% ('dinosaurs' - 'prehistoric' - absolutely!). For the Comic (1), which was generously marked with a consolation mark of one for 'Yes' and 'Can't tell' (the comic could just as possibly have been printed at any date between 1942 and 1978) as well as the full two marks for the correct and non-contemporary 'No', 90% marks were recorded for Question 4. Yet, for Question 5, although three choices: Twentieth Century, Seventh Decade or This Year were equally generous as acceptable answers, the proportion of children confirming the correct answer slumped to 38%; many children answered 'Victorian'. Similarly, the anachronistic advertisement for 84% was certainly not 'made in the same lifetime' of Henry VIII in answer to Question 4, but only (still higher than the average) 57% confirmed this decision by answering 'modern' to Question 5; a considerable regression had taken place from the firmness of the first answer. For the textbook illustration of the 'Victory's' gundeck the parity of the children's understanding of 'contemporary' and date is more evident (77: 70%); for the Edwardian street, the American astronaut and the Vietnamese casualty, success with the concept of 'modern' and, in the two correct cases, 'decade' is even greater in Question 5 than their previous success with Question 4 (71: 74%; 61: 85% and 60: 74%). The averages gained for both Control and Pilot groups for these two questions are very close; 58 and 55% for the Pilot schools, 53 - 52% for the Control.

A simple comparison of two separate percentage scores is not sufficiently searching to produce significant evidence of a concept adequately maintained. One cannot assume with conviction that the average 58% of the Pilots' average Question 4 result matches the 55% achieved in response to

Question 5; only by counting every answer from every child can we attempt to match one question's results with another. This having been done, the resultant reduction of the percentage 'match' is far less convincing than the more optimistic indications of each single score.

Unfortunately, individual answers for every pupil in both Pilot and Control samples' tests' results were not retained for Pictures 1 - 3 of Test 1. Nevertheless, such adequate scores were retained for Pictures 4 - 21; these were re-counted as pairs of test scores for both Questions 4 and 5. At first sight, comparison of the results is disappointing. (18) The marking scheme for five of the pictures (4, 9, 12, 13 and 15), these being modern 'reproductions' offered a single consolation mark in assessing response to Question 4. Thus, for the 'Edwardian Christmas' score, two marks were given for 'not contemporary', followed by two marks for the 'modern' answer to Question 5. If, in following through, the child had chosen 'Fairly Old', '1800 - 1900' then one consolation mark was given. Similarly a single mark was gained by wrongly answering 'Medieval' for Joan's 'story book' visions; also for the model dinosaur, the museum street and the gundeck of the 'Victory', if the child in any of these cases responded with the date of the subject of the picture's historical period rather than the modern date of its reproduction. Unfortunately, in later tests, this 'consolation mark' was felt to be over-generous, creating too optimistic a result for the children's dating of the pictorial evidence and was abandoned. For the storybook picture of the 'Tudor' village (2) and the Henry VIII advertisement (21) no single mark was given for '1500 - 1800'. This is unfortunate, in that one can no longer distinguish between those children who gained two marks for the 'modern' answer and those who now gained 0 for the 'near miss' or wrong answer. We can, in the cases of the four pictures with consolation marks, postulate an 'alternative' date for the picture, to compare with those who appreciated the 'real' date. Thus, we discover those who, having

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18. See Table XX on page 208.

TABLE XIV C R ECT MATCHING OF 'CONTEMPO A Y' STATEMENT (QUESTION 4) WITH CORRECT DATE (QUESTION 5) (Fig 24).

These scores are analysed in order of the Pilot group's order of pre edence, 1 - 18.
Pictures 1 - 3 have no record of these scores

PILOT SCHOOLS Order of Precedence	Slide No.	Subject (per ent ge marks t roughout)	C. or N.C	Q.4	Q.5	Correct Pairs	Wrong Date	'Alternative' Date
1	17	Victorian Wedd ng Group (Photogr ph)	C	85	76	68	17	-
2	8	Astr naut on t e l on (Ph tograph)	C	61	85	57	4	-
3	21	Henry VIII Advertisement (Re ns ru t on)	N.C	84	57	52	32	-
4	5	American Soldier in Vietnam (Ph tograph)	C	60	74	49	11	-
5	9	Joan of Arc's Visions (Storybook)	N.C	85	59	45	22	18
6	13	Museum Street (Reconstruction)	N.C	71	74	42	2	27
7	7	Orville Wright's Aeroplane (Photograph)	C	50	76	41	9	-
8=	10	German Infantry (Photograph)	C	53	61	37	16	-
8=	15	Gundeck of HMS 'Victory' (Reconstruction)	N.C	71	70	37	4	30
10=	11	Pharaoh's Tomb (Original)	C	57	46	28	29	-
10=	4	'Edwardian' Christmas Visit (Storybook)	N.C	71	60	28	6	38
10=	12	Model of Dinosaur (Reconstruction)	N.C	89	59	28	8	53
13	14	Illuminated Manuscript (Original)	C	50	45	25	25	-
14	20	'Tudor' Village Scene (Storybook)	N.C	68	17	13	55	-
15	18	Stage Coach in Snow Drift (Painting)	C	18	44	9	9	-
16=	19	Froissart's Chronicle (Original)	C	16	43	8	8	-
16=	16	Great Fire of London (Painting)	C	28	28	8	20	-
16=	6	Sea Battle of 1666 (Painting)	C	12	55	8	4	-

TABLE XV CORRECT MATCHING OF 'CONTEMPORARY' STATEMENT (QUESTION 4) WITH CORRECT DATE (QUESTION 5) (Fig.25)

These scores are analysed in order of the Control group's of precedence, 1 - 18.
Pictures 1 - 3 have no record of these scores.

CONTROL SCHOOLS Order of Precedence	Slide No.	Slide (Percentage marks throughout	C. or N.C.	Q.4	Q.5	Correct Pairs	Wrong Date	'Alternative' Date
1	8	Astronaut on the Moon (Photograph)	C	63	87	57	6	-
2	5	American Soldier in Vietnam (Photograph)	C	63	76	52	11	-
3=	17	Victorian Wedding Group (Photograph)	C	77	58	49	28	-
3-	9	Joan of Arc's Visions (Storybook)	N.C.	84	66	49	24	11
5	7	Orville Wright's Aeroplane (Photograph)	C	48	79	39	9	-
6=	21	Henry VIII Advertisement (Reconstruction)	N.C. N.C.	80	42	35	45	-
6=	13	Museum Street (Reconstruction)	N.C.	70	71	35	5	-
6=	15	Gundeck of H.M.S. 'Victory' (Reconstruction)	N.C.	72	63	35	16	-
9	10	German Infantry (Photograph)	C	43	55	30	13	-
10	4	'Edwardian' Christmas Visit (Storybook)	N.C.	71	58	24	7	39

/Continued

TABLE XV /Continued
(Fig 25)

CONTROL SCHOOLS Order of Precedence	Slide No.	Slide (Percentage marks throughout)	C. or N.C.	Q.4	Q.5	Correct Pairs	Wrong Date	'Alternative' Date
11	12	Model of Dinosaur (Reconstruction)	N.C.	84	56	19	6	59
12	14	Illuminated Manuscript (Original)	C	30	44	15	15	-
13	20	'Tudor' Village Scene (Storybook)	N.C.	68	16	12	56	-
14	11	Pharaoh's Tomb (Original)	C	24	44	11	13	-
15	18	Stage Coach in Snow Drift (Painting)	C	18	42	10	8	-
16=	19	Froissart's Chronicle (Original)	C	12	40	6	6	-
16=	16	Great Fire of London (Painting)	C	25	21	6	19	-
18	6	Sea Battle of 1666 (Painting)	C	7	55	4	3	-

expressed a correct judgment of either contemporary or non-contemporary, followed through accurately with two marks in the contemporary or non-contemporary date. These, the expert children, were recorded as 2 - 2 for Questions 4 and 5. Those who in any of the four possible cases scored one consolation mark for the 'alternative' date were counted as 2 - 1. All the others who with reference to any picture having rated it as 'contemporary' or 'non-contemporary' then offered an irrelevant date, were marked 2 - 0.

Such close analysis tends inevitably to break down the large percentage scores for Question 5 into a two or three part set of different combinations to that score. Thus, we find that (19) the full marks for Question 4, which range for the Pilot group from 12 - 89%, are reduced to a more limited range of 8 - 68%. A commendable 71% average score for Question 4 on Picture No. 13 is reduced to 42% who dated the picture correctly. Of the rest, 2% only estimated a false date; the remaining 27% chose the tempting, but wrong, 'Edwardian' alternative. Similarly, of 89% who thought that they knew the model to be non-contemporary, 53% went on to date it as 'prehistoric'; only 28% of the Pilot sample gave the model its correct modern date. Where there is no alternative date the result is usually more discouraging. For example, 84% of the Pilot sample knew that the After Eight advertisement was not contemporary with Henry VIII (Question 4). Even so, 32% then dated the advertisement wrongly, leaving 52% who assessed the picture as a modern advertisement. The Control group's scoring by this more searching method is hardly different from the Pilot group's. Often their percentage scores are identical, occasionally they take the lead (Pictures 5, 9 and 19). The comparative scores are offered in their revised state for contemporaneity as follows: (the order of precedence is set by the relative success of the Pilot group, even in cases where the Control schools' scores may exceed them)

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19. See Table XII on page 188.

We note a peculiar aspect of the children's choices. In those cases above where there were only two choices from the paired marks, that is 2 - 0 and 2 - 2, the overall average extent of wrong answers is high. That is:-

	Right Pair	Mismatch
Pilot Schools	63%	37%
Control Schools	52%	48%

In those cases, however, where an alternative, semi-acceptable date of period rather than of picture is available, the proportion of outright wrong answers falls dramatically:-

	Right Answer	Alternative Answer	Wrong Date
Pilot Schools	46%	42%	12%
Control Schools	42%	45%	13%

Presumably those children who lack the essential 'nerve' to assess a dinosaur picture or a museum street as modern do not therefore lack all sense of time or period. Their error, if it can be checked and recorded, will, in all probability, reveal a commonsense alternative view. We see two stages in the children's conceptual development related to historical time. At a lesser level of maturity will be those who assimilate the elementary idea of a 'period' or a 'date' for a given subject but will at ten years of age become confused between the nature of the subject and its period and the alternative, different nature of the evidence which presents that period or subject to him. With unfamiliar items of pictorial evidence the general level of acceptance both of subject-period and evidence-date will be generally low, well below 25% marks. For other more familiar pictures, such as comic books, some storybooks, photographs, film, models and even in some cases fairly elaborate 'fakes', the general level of the children's ability to discriminate between the period and its portrayal, the subject and its evidence, rises to a level which ranges from 35 - 70%.

We must conclude that misuse of the term 'contemporary' as inevitably meaning 'modern' can cause confusion in

children's minds at 9 - 10 years of age, particularly when an illustration is unfamiliar or is not as genuine as it appears to be. Yet for some, the concept of 'picture contemporary with the event', the quintessence of the idea of historical evidence, is not wholly unmanageable at that age. A commendable number of both Pilot and Control school children demonstrated a high average rate of success in this difficult area. Perversely, their skill was more clearly demonstrated in the case of more difficult secondary sources than in many which are primary. Children are far less easily deceived by the adventurous fiction of the comic or the film, the painstaking reconstruction of the model and the museum street than they are convinced of the contemporary nature of a medieval chronicle, a seventeenth century painting or the interior of a Pyramid. They certainly require more experience of the idea of 'schools' and 'genres' of paintings, the idea that there is a vast store of medieval manuscripts, a school of Dutch painting, a recognizable type of Victorian narrative painting. To children at this age these realities could just as easily be the 'contemporary' productions of the media, reconstructed for a television programme or a comic book. Their 'authenticity' lies for some in the mere fact that they have been printed at all.

Careful analysis of the relatively high average scores per question forces us to the conclusion that with, for example, the 'Tudor' village scene from a storybook, an initial score of apparently 68% success, in guessing its 'non-contemporary' nature is reduced in Question 5 by 55% of children who obviously did not understand their first answer. Similarly, there are not 33% of the children who appreciate that the painting of the Fire of London was dated 1667, but only 8%. The children's success is seen to occur mostly in their appreciation of photographs and reconstructions. The highest mark of the (fully understood) contemporary nature of the Victorian Wedding photograph is still high at its reduced score of 68%. Indeed, nine of those pictures which, in the course of a complex and demanding test of children of only 9 - 10 years

of age, have rated a fully-understood score of 17-68% on such a complicated matter as the relative contemporaneity of both secondary and primary picture sources, must be accepted as convincing evidence of the children's developing sense of evidence and time. Evidently, more help is required in the ensuing school years to increase the pupil's awareness and experience of original picture sources, more particularly paintings, and to create a more confident appreciation of the proper nature of storybook illustrations.

Computer print-out of the programme previously used for analysing the battery of sequence tests sorted the following distribution of scores for the first series of picture tests:-

(Fig. 26) TABLE XVI. Distribution of Picture Test Scores correlated with C.A., R.A., V.R.

Marks	No.of Pupils	Boys%	Girls %	Average* C.A.	Average* R.A.	Average* V.R.
10	0	--	--	-	-	-
9	1	1:100	0:0	8.10	12.07	124
8	38	28:74	10:26	9.06	11.04	113
7	193	119:62	74:38	9.05	10.09	110
Average6.1.....						
6	234	117:50	117;50	9.04	9.08	101
5	133	61:46	72:54	9.01	8.08	94
4	40	17:43	23:57	9.02	8.01	88
3	2	1:50	1:50	9.06	8.01	69
2	0	--	--	-	-	-
1	0	--	--	-	-	-
0	0	--	--	-	-	-
Total	641	344	296	9.04	9.06	101
Average Mark:=	6.1	54%	46%			

*Ages and VR as tests in July 1978, i.e. at mid-project.

The average mark was 11% higher than for the previous year's seriation tests. This was due to the inbuilt advantages of the multiple choice questions and the possibilities of amassing some marks by intelligent observation or guesswork. For the same reasons, the curve of the result is compressed between marks 2 - 9 instead of, as in the seriation tests, from 1 - 10. The positive correlation of test scores with chronological ages, reading ages and verbal reasoning scores is as marked as before, though with the picture tests it appears to have been easier to score marks from 2 to 6 with lower reading ages and lower VR scores than had been the case in the seriation tests. 63% of those above average age scored above average in the time section. The discrepancy in performance by sex was as marked as it had been in the previous tests. 60% of the boys scored above average for the authenticity section, fewer than the 67% who scored high recognition scores, but more boys 68% scored above average for time with pictures than the 52% above average for sequence. The girls' scores were lower: 46% of girls scored above average for authenticity and 51% for time, as compared with 52% of girls above average for recognition and 32% for sequence. Thus, the girls' performance had improved in terms of time but was lower in terms of authenticity.

Consistent scoring (A, B and C groups) was also higher for the group as a whole. There were 18 A's, 260 B's, 103 C's and 0 D's, compared with 8, 80, 175 and 19 respectively for Recognition and Sequence. These, it will be recalled, are those children who gained average marks by consistent scoring, rather than by sporadic differences test by test.

Schools' scores reveal interesting differences in average performance with the picture tests. The computer printed out the following results, school by school:-

(Fig: 27)

TABLE XVII. SCHOOLS AVERAGE MARKS FOR PICTURE TESTS

School Code	Average Marks A	T	Tot.	Av. C.A.	Av. R.A.	Av. V.R.
AA	7	6	6	10.06	10.01	105
BB	6	6	6	9.00	9.05	104
DD	6	6	6	9.04	9.01	95
EE	7	6	6	9.03	10.00	107
EF	6	5	6	9.04	9.07	99
(EY)	6	5	6	9.05	9.09	101
(FY)	6	5	5	9.03	8.05	95
NN	7	6	6	9.04	10.05	106
OJ	7	6	6	9.03	9.00	96
OP	7	6	6	9.07	10.00	104
RR	7	6	6	9.04	10.01	98
SS	7	6	6	9.02	10.07	114
ST	7	6	6	9.04	9.01	98
VV	6	5	6	9.02	9.01	99
XX	6	6	6	9.05	10.00	102
Averages	6	5	6	9.04	9.06	101

It is interesting to note how clearly this school by school division bears out the contention that it was possible to score average and above average marks in school such as ST, VV, DD, EF and OJ, where the neighbourhood and school were not highly endowed or as well advantaged as others. This can be largely attributed to a high degree of motivation and determined effort by children and teachers in those "down-town" schools. By comparison, the superior results of schools AA, SS, OP and NN were only to be expected. The question of school differences will be more fully discussed in Chapter Seven.

We could conclude with some confidence at the end of the

penultimate year of the project that the second set of picture tests, devised to investigate ideas of time and authenticity had contributed positively to our understanding of children's appreciation of the past. Teachers who conducted the experiment estimated the progress made by the children very confidently: "Children enjoyed these (transparencies) and benefited linguistically from the discussions which evolved" (AA); "The children are now accustomed to this technique. They know what to look for, the type of clues - again, very precise use of language, e.g. "specific battle" rather than "war" (OP); "Children enjoyed looking at and discussing the slides. This I feel was the best aspect of the project with a really interesting and wide range of subjects .... Enjoyable, a good test of the children's awareness of time and date" (XX); "The limited vocabulary of those children with low reading ages proved a handicap. This limitation gave rise to difficulty in describing events recorded on the slides. Those children from more priveleged backgrounds and those with varied interests and hobbies proved more able to describe the depicted scenes in a meaningful and appropriate way, using, when necessary, a rather specialized vocabulary. The more able children enhanced their answers by utilising information not only from previous lessons and topics, but also from television programmes and books. Thus, the better children benefited from the stimulus provided by the slides and integrates knowledge from a wide variety of sources" (EE);

'A full year's programme needs to be carefully worked out so that as many children as possible may see as many slides as possible. We shall hope to improve next year ...' (EF); 'Children are becoming more observant and search avidly for clues to date pictures. They pay attention to clothes, weapons and armour and have progressed in their critical analysis. Work books are of great help in directing observation. Slides provoke plenty of discussion as do the terms 'realistic' and 'authentic' (OJ); 'Children generally were enthusiastic about the transparencies and found them more stimulating than pictures in their history books and other forms of visual aids. Educationally they were valuable in teaching the concepts and vocabulary related to the scheme' (AA); 'Very good stimulus from these and valuable discussions. Still difficulty in dating items of the 'slide of a photograph of a film of a Victorian novel set in the Middle Ages type' ' (DD); 'The children have benefited very considerablv from the use of slides ... Our children are indeed becoming more critically aware of the past. Ability to sequence successfully and to judge the authenticity of the material needs to be developed considerably more ... I rate the teaching techniques employed in this project so highly that I have decided that they will become a permanent feature of our History Schemes' (YY).

We can sum up the extent of progress made as follows. Firstly, children in both samples were well able to manage the ideas and skills required by the picture tests. Their disabilities lay more in the fields of language and experience rather than of general knowledge; the wide range of knowledge of the average children is, in fact, notable. Test results have shown that the Pilot group had accelerated its progress by means of the special curriculum of classroom transparencies and workbooks. Their skills in observation and deduction are often superior to their use of the necessary language to explain decisions; written language is in fact the weakest of the skills they demonstrate. We must, however, bear in mind that the general average of achievement in a complex, subtle test, has been high, well above 50% in almost every case for both Pilot and Control groups. These are

'children of the media', well versed in the acceptance of pictorial information, experienced in identifying different means of producing a picture. These undoubted skills come more readily to the interpretation of modern pictures, more particularly those which are photographs. Many children have wide experience of museum visits, television series, modelling and collections and they draw upon these skilfully for ideas and language. They are, at this stage, steadily developing concepts of authenticity and time, but the former idea is more susceptible to practice and training. Their 'time sense' is, at 9 - 10, demonstrable at a level above 50% (with sequence at 7 - 9 years of age this was nearer 40%) but they are more confident in choosing the period of a picture than of understanding whether it is 'contemporary' or not. They are capable of understanding the special nature and authenticity of ancient and medieval originals but may become confused as to whether these have been produced more recently than the period which they illustrate. The concept of authenticity provides more ground for improvement and many children (a number to be defined later by computer) have very highly developed skills indeed in this type of investigation. We could, at the end of the school year 1978/79, assume that the children would continue to improve during the final year of the project 1979/80, when it was intended to extend their existing ideas of identification and time-placing from pictures to written and printed records. At the same time, pictures from the past would continue to form a staple in their historical diet.

During the final school year of the project, three more picture tests, nine pictures in all, were set, in addition to the document tests which were the main programme for 1979-80: One further final recognition and sequence test was also taken. The purpose of these later tests was to discover whether there was any perceptible progress in the children's

abilities as revealed by the battery of picture tests, taken during 1976-1978. The choice of pictures could not be standardised, so that apparent progress or regression might be due to relatively more or less difficult pictures rather than any change in the children's ability. Several of the nine chosen pictures were, in fact, amongst the most difficult in terms of visibility and content, of the entire series. The set of pictures and the results of this final sub-set of tests in comparison with the previous years' results, were as follows:-

(Fig. 28) PICTURE TESTS (AUTHENTICITY AND TIME) 22 - 30

(1) PILOT GROUP TABLE XVIII

TEST	NO.	SUBJECT	AUTH.	TIME	TOTAL
1-7	1-21	As listed on Table page	62	56	60
8	22	Photograph of Stonehenge: 1979	78	57	70
	23	The Wooden Horse (story book): 1978	54	60	57
	24	La Tour's 'Adoration': 1643	73	60	68
9	25	Mantegna's 'Crucifixion': 1495	76	59	69
	26	Cave-painting, Altamira, C18,000 BC	69	33	54
	27	Hogarth: 'The Graham children' : 1742	64	39	54
10	28	'Battle of Blenheim' 1704	58	32	48
	29	Darius v Alexander: Mosaic c.BC.330	58	19	42
	30	Photograph of Greek Jewellery c.1969	69	47	61
AVERAGES: TESTS 8 - 10			67	45	58
AVERAGES: TESTS 1 - 10			63	53	59

Fig. 29: TABLE XIX

PICTURE TESTS (AUTHENTICITY AND TIME) 22-30

(2) CONTROL GROUP

TEST	NO.	SUBJECT	AUTH.	TIME	TOTAL
1-7	1-21	As listed in Table page	51	52	51
8	22	Photograph of Stonehenge: 1979	73	45	61
	23	The Wooden Horse: story-book 1978	39	54	44
	24	La Tour's 'Adoration': 1643	65	61	63
9	25	Mantegna's 'Crucifix-ion': 1495	67	67	67
	26	Cave-painting, Altamira: 18,000 BC	56	32	46
	27	Hogarth: 'The Graham children': 1742	60	33	49
10	28	'Battle of Blenheim': 1704	55	31	45
	29	Darius v Alexander: Mosaic C.BC.330	48	12	34
	30	Photograph of Greek Jewellery C.1969	65	36	54
AVERAGES:		TESTS 8 - 10	58	41	51
AVERAGES:		TESTS 1 - 10	55	52	54

The conclusions to be drawn from these final results are significant and not entirely optimistic. During the year between the completion of the main set and the final results of the additional sub-set, both groups of children demonstrated a little additional maturity in the verbal skills of identifying and authenticating increasingly difficult pictures. Test by test, in a few cases, the advantage to the pilot group was considerable (e.g. 23,28 and 29). The pilot children appear to have mastered the problems of textbook illustrations

(No. 23) and gained more experience of paintings (Nos. 24, 25 and 27). Overall, however, their advantage was not progressively maintained whist the control schools also improved their relative position.

With reference to the 'time' section of the test, both groups lost ground. The control group, relatively, have done no worse than the pilot schools and, in two cases (Nos. 24 and 25) take a slight lead on time. The considerable disadvantage of the Pilot group in assessing the time-placing of Mantegna's 'Crucifixion' is partly due to the coincidence of the painter's lifetime (1431-1506) with the 'medieval' section of Question 5, which also includes the life of Christ Himself. This caused confusion to the pilot group whilst those control children who blithely dated the picture in Christ's lifetime gained fortuitous marks. The more critical pilot groups, sensing a 'catch' and searching for a later date for a painting which is not typically 'medieval', moved away from Christ's lifetime, guessing wildly. Full marks were given for the Renaissance choice as the painting's date, (which would have been a less meticulous but more realistic dating of the picture) but this choice was rarely made; 'Victorian' was the usual answer.

Hogarth's painting of the Graham children (27) lost marks for both groups because neither had an adequate concept of 'Georgian' costume, except one class who had watched a television programme entitled "Out of the Past". Half marks were given for the alternative choices 'Elizabethan' or 'Victorian' but none for 'medieval'. The cave painting defeated both groups because the illustration chosen looked too clean and fresh to be ancient; nevertheless, the pilot groups were equally deceived. With photographs, and their implicit trap of the picture's modern date as opposed to its ancient subject, the pilot children maintained some of their initial advantage, though many of them had clearly forgotten the previous years' experience of this difference.

A closer analysis of the means by which the two groups of children achieved their full percentage score for the Time section is essential. This can be done, as before, by coupling the two marks for Questions 4 and 5 . These were awarded on the previous 2, 1 and 0 basis; the full mark was given for a correct answer, contemporary or non-contemporary (Q4) and for the correct date of the picture (Q5). Where the period but not the picture was correctly dated one mark was given; no half-score was possible for Question 4. Zero was given in each case for incorrect answers. Thus, pairs of answers include those children who correctly stated 'contemporary' or 'non-contemporary' with the picture's actual date, (2-2); those who did not understand 'contemporary' but dated the picture as required (0-2); those who correctly thought the picture to be 'contemporary' but dated the event or its period, not the picture (2-1) and those who did not understand 'contemporary' but dated the period or event accurately (0-1). These are all relatively acceptable answers though only 2-2 indicates a full understanding of the concept of contemporaneity. The combinations 2-0 or 0-0 reveal misunderstanding or guess-work.

The major flaw in this marking scheme is in the large proportion of marks available for guess-work or misunderstanding on Question 4. Children in both groups could build up large percentage scores in 2's by gaining 2-0 combinations. The following Table reveals the extent of this misleading trend in the 'raw' scores.

PICTURE TESTS 8 - 10
ANALYSIS ON 'TIME' SCORES.
(Percentage of children)

TABLE XX

(Fig. 30)

		PILOTS						CONTROLS					
Picture	Medium and Subject	Time Score %	1 Cont/ Date 2.2	2 Date Only 0.2	3 Period Date 2.1/0.1	4 Acc. Date	5 Error 2.0 0.0	Time Score %	1 Cont Date 2.2	2 Date Only 0.2 0.1	3 Period Date 2.1/	4 Acc. Date	5 Error 2.0 0.0
22	Photograph (Stonehenge)	57	23	13	31	67	33	45	5	7	34	46	54
23	Book (Wooden Horse)	60	30	3	11	44	56	54	11	2	14	47	53
24	Painting (Adoration)	60	8	2	51	61	39	61	5	2	66	73	27
25	Painting (Crucifixion)	59	22	4	3	29	71	67	39	9	8	56	44
26	*Painting (Altamira)	33	14	8	0	22	78	32	12	15	1	28	72
27	*Painting (Hogarth)	39	7	2	43	52	48	33	5	5	40	50	50
28	Painting (Blenheim)	32	6	43	1	50	50	31	8	40	1	49	51
29	*Mosaic (Darius)	19	4	8	8	20	80	12	2	6	3	11	89
30	Photograph (Jewellery)	47	17	9	27	53	47	36	5	9	20	34	66
22-30	All Subjects	45	19	15	10	56	44	41	21	10	10	41	59

* Contemporary works.

Acceptable totals for all three means of assessing one 'correct' date or another are revealed by totalling columns 1-3, thus excluding the guesswork indicated by scores of 2.0 in column 5.

It is now abundantly clear that the concept of 'contemporaneity' is undeveloped in children of 10-11+ working with undated pictures, or cannot be demonstrated by these picture tests: this applies to pilot and control children alike. If anything, the control groups have a slight advantage from under-training, though overall the pilot's group of accep able dating answers, other than contemporary, (columns 1 + 2 + 3) at 56%:41% shows a greater understanding of time than is apparent from the original 'raw' time score at 45%:41%. In individual cases (Pictures 22 and 30) the pilots' lead lengthens considerably in analysis. In more cases than before however (Pictures 23, 24, 25 and 26) the control group's advantage is also more substantially demonstrated in terms of 'acceptable' dates. The only marked successes, with some advantage to the pilot children, are photographs, (22 and 30), where 'contemporary' may have been confused with 'modern'.

Leaving the complication of contemporaneity aside, both sets of children show a barely adequate grasp of dating individual pictures: overall, the pilot group have more dating success, an advantage of 15% over the control group, but only with photographs (22 and 30) is there any considerable superiority in their individual performances. In both paintings of Christ, more control pupils give an acceptable answer, for the reasons given above. In six of the nine cases, half or more than half of both groups guess or answer incorrectly. The margin of error appears to be greatest with two of the three contemporary paintings (Pictures 26 and 29).

One cannot avoid the conclusion that, after an interval

of time, when the pilot group's weekly curriculum on pictures had lapsed, the control group regained a relative advantage over 'time sense'. It may be that as in the case of the Mantegna painting, the Pilot school children's confidence was undermined by doubt and some confusion due to their inadequate grasp of the concept of contemporaneity. This suggestion reinforces observations which had been noted during the previous set of picture tests (20). Improvement is possible in the understanding of authenticity but concept of time is less malleable and less firmly formed. The 'Hawthorne effect' of the Pilot schools first year's work had, in fact, to some extent worn off when attention was diverted from pictures to documents. This could lead to the assumption that continued work on pictures at least to the age of 12+ might be more beneficial than a premature attention to textual problems.

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20. See pages 149-150.

CHAPTER SIX:

THE USE OF WRITTEN RECORDS: 1979-80

The main line of development in the Project's final year was to be a study of written records, as manuscripts and printed archives. In April 1979 (during the term before documents were to be introduced to the children) a substantial Newsletter (1) was introduced to teachers at one of the regular in-service meetings, to prepare them for this study. The Newsletter was virtually the script of a series of lessons for teachers' use. It was accompanied by thirty coloured slides which illustrated points made in the lessons; the script included many illustrative written records in print. The guide adopted a wide ranging definition of documents: 'When we use the word "document", we shall mean evidence of any sort. You have been using evidence for some time now so you should not be surprised by this idea. We shall say "document" when we refer to any relic of the past which teaches us something of the way people lived and worked or governed themselves in olden days'.

The coloured slides illustrated prehistoric jewellery, a castle site; an old house and Nineteenth Century machinery, chosen to show children what such sites and objects can teach us of their makers. The children were reminded that they had used pictures as documents during the past two years; six choices from the original slide collection illustrated this

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1. Dudley L.E.A: Children's Awareness of the Past. Newsletter 18. June, 1979.

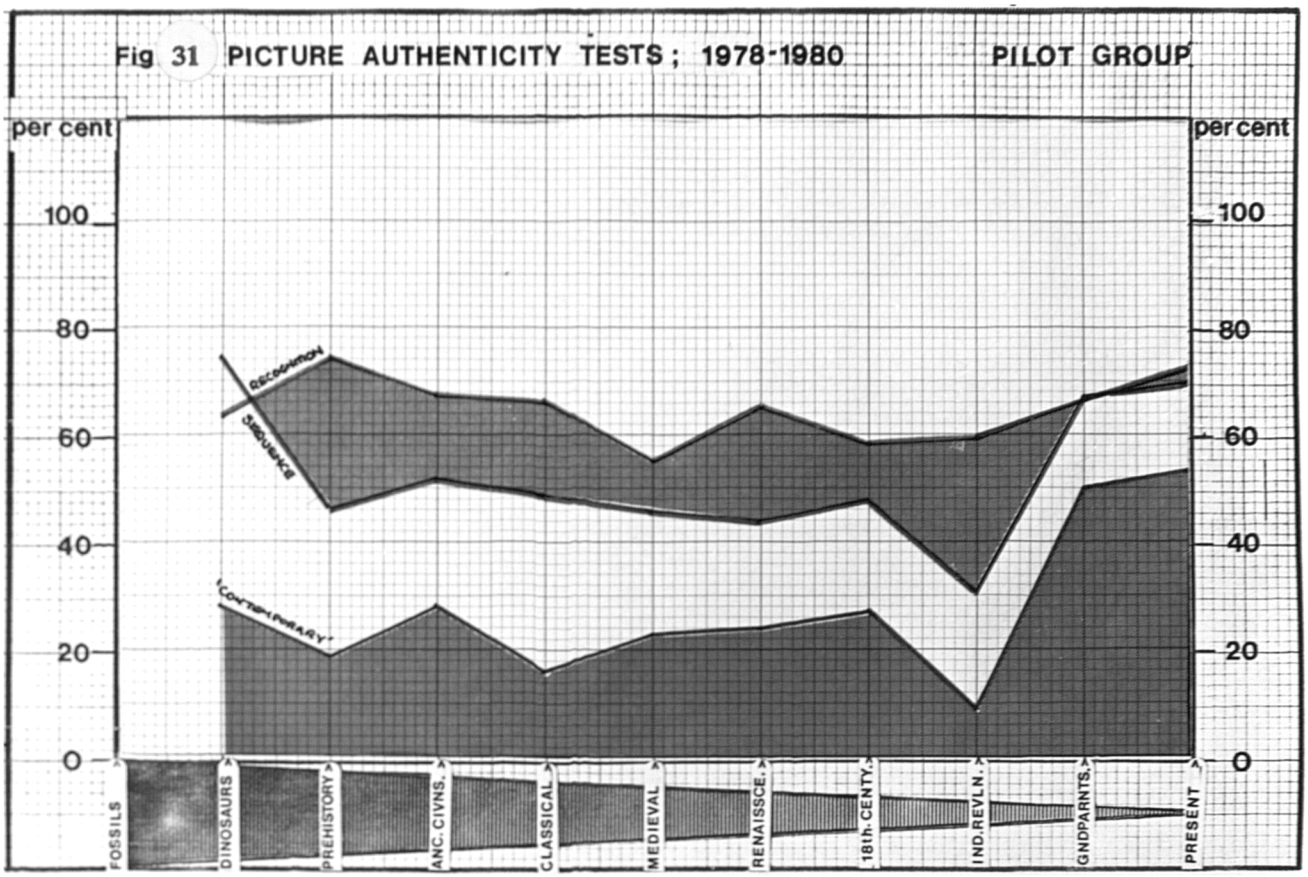
Fig 31 PICTURE AUTHENTICITY TESTS ; 1978-1980
PILOT GROUP
per cent
per cent
100
80
60
40
20
0
RECOGNITION
SEQUENCE
'CONTEMPORARY'
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

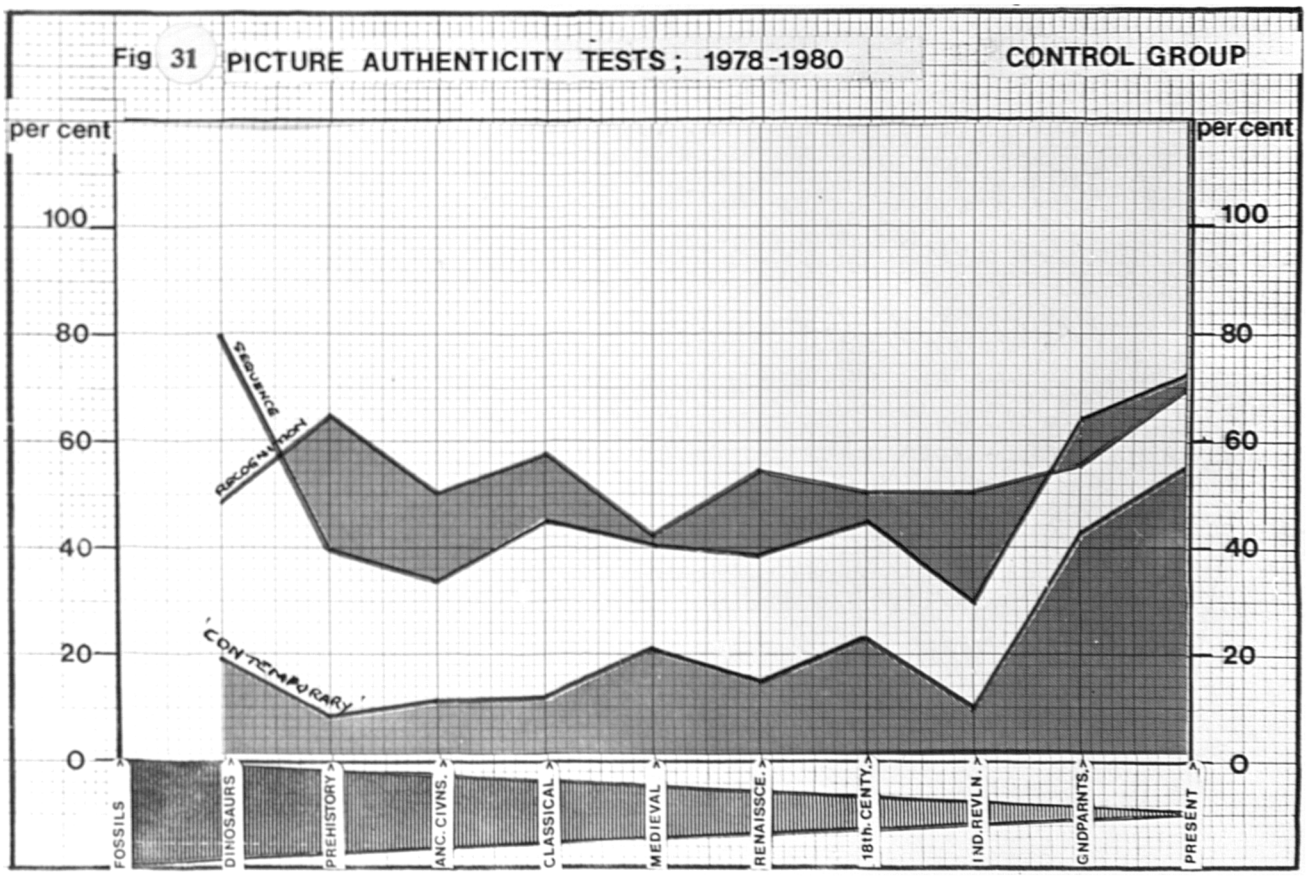
Fig 31 PICTURE AUTHENTICITY TESTS ; 1978-1980
CONTROL GROUP
per cent
per cent
100
80
60
40
20
0
SEQUENCE
RECOGNITION
'CONTEMPORARY'
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

point. Stories, too, were re-introduced from the project's earlier anthology; the children were asked to consider what Froissart's story of Crecy teaches us of the personality of Edward III; what the witnesses at Joan of Arc's trial tell us of her actions and what we learn of the courage of Louis XVI from the Abbé Edgworth's eye-witness account of his execution.

Next, written archives, the papers of business, work, government and living, were introduced. Slides showed a typical Act of Parliament of 1722, and a Dudley rating form of 1978; the children were invited to consider the contents of their pockets and desks as documents illustrative of their own life-style. Other slides showed: a recent page from the T.V. Times; a National Health Service medical card; a British Rail inter-city service timetable; the Daily Mirror for Monday, 4th September, 1939; a commemorative plate of Queen Victoria's Golden Jubilee; a page from Domesday Book, another from "The Country Diary of an Edwardian Lady" (2) and the facsimile of a first edition of the Ordnance Survey Map of 1801. Following lessons introduced the idea of books as evidence, with examples and extracts from poems, children's text-books and source sets, such as "They Saw It Happen" (3).

Finally, the idea of misleading documents was introduced; the guide pointed out the varying viewpoints of different eye-witnesses and the possibilities of exaggeration or bias. The series of lessons concluded with several exercises and

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2. The Country Diary of an Edwardian Lady: Edith B. Holden. Michael Joseph/Webb and Bower. 1977.

3. They Saw It Happen: An Anthology of Eye-Witness Accounts of Events in British History. W.O. Hassall. Basil Blackwell, Oxford, 1957.

problems to be solved. These necessitated the teaching of specific vocabulary, such as "manuscript", "transcript", "facsimile", "primary", "secondary", "original", "archive", "sources" and "forgery". As an annexe to the teacher's guide, a set of thirty facsimile documents was appended with additional teaching notes. These are also listed in an Appendix (4). As a postscript, a cassette of thirtyseven "sound documents", original recordings and reconstructions dating from 1822 to 1963 was added. The include the sounds of songs, sirens, steam locomotives and aircraft engines, with extracts from political speeches and newscasts as a sequence of sound to remind teachers and children of yet another dimension of the documents.

With the teacher's guide was included a new form of test paper which would be used throughout the final year of the project (5). It will be seen that this paper was modelled closely upon the format of the previous years' test papers on coloured slides. It was hoped that the familiarity of the paper's layout and sequence of questions would lead the children, as in fact it did, into a natural transition to the testing of verbal records. Question 1 included twenty nine classifications or types of written record as multiple choices. Question 2, once again, required a simple sentence of explanation or summary of the document's nature, with the additional requirement of four facts which had been learned from the script. Question 3 required the nature of the copy (almost inevitably a facsimile or transcript) and asked if it was complete. Question 4 repeated the test of authenticity which had been applied to pictures, but now required an additional answer, stating a reason for the decision. This was to prove an illuminating source of information on the

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4. Appendix IV pages 518 - 521.

5. Appendix IV pages 464.

children's thinking (6). Question 5 asked whether the document was a primary or secondary source. Questions 6, 7 and 8 turned to the time element of the document, asking, as before, whether the document was contemporary with its subject (Question 6) and for its date (Question 8) on the familiar scale previously offered as Question 5 of the picture test. Newly inserted was Question 7, which asked for the period or date of the subject of the document. Thus, the child was asked to distinguish carefully between document, period and document again; this was, perhaps, a confusing "switch" in the nature of the questions.

During the course of the final year, a series of six document tests was set; that is, two in each term. Each test comprised three paper prints of documents, usually in facsimile or transcript form. Late in the series of tests, it became obvious that this large number of children could never see an original document as a test; the problem was virtually insoluble. As a compromise, three coloured slides of originals were added as an additional document in each of three tests. This involved the school in the inconvenience of setting some documents as papers, others as projected slides. As a final difference in type, Document 20 offered the children the only deliberate forgery. This, ostensibly a letter from Julius Caesar (dated 55 B.C.) was intended to match the "contemporal absurdities tests" previously included in earlier researchers' batteries of tests (7).

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6. See pages 247-250.

7. The Development of the Knowledge of Time in Children: E.C. Oakden and Mary Sturt. British Journal of Psychology Vol. XII Part 4. April 1922. pages 318-321.
   The Growth of the Knowledge of Time in Children of School Age: N.C. Bradley. British Journal of Psychology. No. 138. 1947, pages 75-77.
   Measuring Time Concepts of Children: Frederick Pistor. Journal of Educational Research. Vol.33 No.4, 1939 page 297.

As before, every test set was prefaced by a trial document intended for practice, familiarisation with the paper's questions and as an opportunity for the teacher to explain difficult point s. The full series of twenty documents is listed on pages 216 - 221. It was inevitable that this new series of tests, demanding as it did a high degree of reading ability and comprehension, would be a difficult set; it would demand close attention and a reasonable time in which to answer each paper. The children at the commencement of the academic year were at an average age of 10 years 6 months and it was debatable whether another year's experience with pictures would not have been more desirable. Observations of the children working under the test conditions were reassuring. They appeared to accept the new ideas confidently; one was impressed by their careful attention to documents and question papers. Teachers were prepared to give a class adequate time to study the questions carefully in most cases. The final results (see TableXXIIon page 228) are reassuring. There is no significant fall in the general level of results nor any disastrous increase in the lowest scores. Once again, high expectation of the children appears to have been justified.

As before, the paper could be divided into two main sequences. Questions 1 to 5 were concerned with the identification and authenticity of each document; Questions 6 to 8, with its time-placing. The latter section was, in fact, easier to answer than had been the cases with the coloured pictures, as most of the documents were clearly dated; the question of the contemporaneity of the document, however, was still a difficult problem. One would certainly not expect 100% accuracy but it was reasonable to expect that the aggregate score of time should be higher than that in the previous series of tests. Authenticity, on the other hand, presented a more complex series of demands, particularly in terms of archaic language, difficult words and much concentrated data. The need for a child to be able to scan and skim the document supposed a skill which, at their age,

(Fig.32) TABLE XXI : Description of Documents used as Tests, 1979 - 80

Test No.	Document No.	Description	Type	Format	Date	Dated/ Undated
(I)	Trial	History of the R.A.F. at Halfpenny Green - a page from the Official Handbook listing events from 1938 - 1967.	Facsimile	Printed	1967	Dated
(I)	(1)	Mr. Cobbett's Second Visit to Dudley Postponed - a poster issued by Samuel Cook as Chairman of the Dudley Political Union.	Facsimile	Printed	24th March 1832	Dated
(I)	(2)	Metropolitan Police. Special Constables. Appeal to Capable Citizens. A poster inviting recruitment during the General Strike.	Facsimile	Printed	3rd May 1926	Dated
(I)	(3)	"How I Escaped from Pretoria". By Winston Churchill. An extract from "Pearson's Illustrated War News".	Facsimile	Printed	Dec. 30th 1899	Dated

TABLE XXI (continued)

Test No.	Document No.	Description	Type	Format	Date	Dated/ Undated
(II)	Trial	The Navy's ration scale at the time of the Armada, contained in a letter from William Cecil, Lorg Burghley, to the Privy Council.	Transcript	Type-script	13th March 1588	Dated
(II)	(4)	Apollo 16 Launched on Moon Trip. A news item, with a moon map, from the Daily Telegraph.	Facsimile	Printed	Mond. April 17th 1972	Dated
(II)	(5)	A black and white illustration of a frame from the Bayeux Tapestry "Harold: Rex: Interfectus: Est."	Copy	Tracing	C. 1087	Undated
(II)	(6)	"Well done the New Army" - a cartoon from Punch.	Facsimile	Printed	July 12th 1916	Dated
(III)	Trial	An Act of Parliament for repairing several roads leading from Birmingham through Dudley.	Facsimile	Printed	1722/ 1830	Dated

TABLE XXI (continued)

Test No.	Document No.	Description	Type	Format	Date	Dated/ Undated
(III)	(7)	The Centurion's Servant, page 356 of the Children's Bible.	Facsimile	Printed	1924	Undated
(III)	(8)	Early Paleolithic hand-axes: a page from the British Museum's Handbook, with illustrations.	Facsimile	Printed	1956	Undated
(III)	(9)	A set of six coins of reigns from Queen Victoria to Elizabeth II.	Facsimile	Printed	C.1890 - 1979	Dated
(IV)	Trial	Aerial voyages over London from Ashburnham Park, King's Road, Chelsea, a poster advertising trips in a captive steam balloon with a picture and dimensions.	Facsimile	Printed	1870	Dated
(IV)	(10)	Scale of pay for the British Navy at the time of the Armada.	Transcript	Type-script	1588	Dated

TABLE XXI (continued)

Test No.	Document No.	Description	Type	Format	Date	Dated/ Undated
(IV)	(11)	Recruiting poster for the Confederate States Army in the American Civil War.	Facsimile	Printed	June 30th 1862	Dated
(IV)	(12)	Business document recording the sales of 503 slaves imported in the ship "Golden Age" out of Liverpool to Africa and Kingston, Jamaica.	Facsimile	Manu-script	10th Dec. 1784	Dated
(IV)	(13)	A charter of the Black Prince in favour of the nuns of Chester.	Original	Slide	1348	Undated
(V)	Trial	St. Mark's account of the resurrection, from the Good News Bible.	Transcript	Type-script	c.60 A.D.	Undated
(V)	(14)	A Declaration of the Representatives of the United States of America in General Congress Assembled (The Declaration of Independence).	Facsimile	Manu-script	1776	Dated

TABLE XXI (continued)

Test No.	Document No.	Description	Type	Format	Date	Dated/ Undated
(V)	(15)	A letter out of the siege of Cawnpore during the Indian Mutiny, from a serving officer's wife.	Trans-cript	Type-script	9th June 1857	Dated
(V)	(16)	A letter of Joan of Arc to her supporters.	Facsimile and Trans-cript	Type-script/ Trans-script	March 27th 1429	Undated By Order
(V)	(17)	Egyptian hieroglyphics from a Pharoah's tomb.	Original	Slide	C.4000 B.C.	Undated
(VI)	Trial	Eight turnpike road tickets from gates surrounding Dudley.	Facsimile	Printed	1870	Dated
(VI)	(18)	Five daily extracts from the diary of Samuel Pepys describing events during the year of the plague in London.	Trans-cript	Type-script	7th June to 16th Oct. 1665	Undated (by year)

TABLE XXI (continued)

Test No.	Document No.	Description	Type	Format	Date	Dated/ Undated
(VI)	(19)	Seven prehistoric tools of paleolithic and neolithic origin.	Originals	Slide	C.50,000 to 4,000 B.C.	Undated
(VI)	(20)	"Transcript of a letter found in a junk shop in Rome and translated from the Latin by John West M.A. on 15th July, 1979". Caesar invites Brutus to reassure him of his intentions.	Forgery	Type-script	Wed. 6th Aug., B.C. 55 and 15 th July, 1979	Dated

The full set of documents is reproduced in facsimile in Appendix IV on pages 470 - 497.

would normally be beyond them without a great deal of regular and necessary practice. Some of the documents were difficult for this age-group in terms of their possibilities as reading exercises. Any word-count of their content would certainly exceed the maximum of 13 years 0 months (word-recognition) and 13 years 3 months (comprehension) recorded by standardized tests on a random group during 1980. Archaic vocabulary, unfamiliar scripts, ("I can't read joined writing very well"), and the amount to be read occasionally created a daunting reading exercise for eleven year olds.

Although every effort was made to include some familiar, topical or attractive documents, with a few non-verbal examples, such as Documents 5, 6 and 9, the full set is more suitable for an age range of twelve to thirteen. This created inevitable difficulty in answering Question 2, where weakness had previously been noted in interpreting pictures. The children were asked first (2a) to identify what the document was about, then (2b) to itemise any "facts" revealed to them by the text. In some cases, the text was actively misleading. For example, Document 11, a recruiting poster, can be interpreted at first glance to be a means of avoiding army service; similarly, the first words of the Declaration of Independence appear to be concerned with nature study not politics. Teachers of pilot classes were advised to encourage children to see the document more as a test of observation than analysis. Thus, meaningful quotation was permissible, and no one "fact" was taken to be more important than another.

As with previous tests, the marking scheme allowed some flexibility. For question 2 a maximum of eight marks was allowed; four could be gained by a simple statement of the document's main content: "It's about changing the government of the USA" (Document 14); "It records the sale of 503 negro slaves" (Document 12) or "It's a man's diary of several

days during the great plague in London" (Document 18). Then one mark each was offered for any meaningful fact discerned; these were usually available in plenty. In marking Question 4, two marks were given for the correct statement as to the document's authenticity or otherwise and another one or two points for any sensible reason for that decision. One mark could also be given to incorrect but worthwhile answers which showed sensible reasoning: "It cannot be a letter from Joan of Arc, because she couldn't write" (Document 16) or "Edward VIII was never King, so the coin is false" (Document 9).

The children's responses varied from those who evidently had no idea of what the document meant, offering merely a few garbled words, to those who were capable of understanding the main tenor of its message. The control group tended to lose patience with the difficulty of the task far more readily than the Pilot classes. Control test papers included many more of those who either omitted to answer or dismissed the document with "I can't read it to learn any facts". Some control classes were evidently frustrated and discouraged; "Can't read the thing" and "I have learnt nothing" were fairly common responses, rarely found in pilot scripts. At the uppermost level of understanding, some children recognised that, for example, Document 14 was concerned "to show the main rules of the law", "It's about human rights" or that the Bible stories in Document 7 prove "That you do not have to be perfect to go to heaven and that no-one is better than anyone else". In the case of Joan of Arc's letter (Document 16) a number of children skilfully singled out the importance of disaffection in the good city of Rheims, the importance of the Burgundians, the reinforcement of the King's Army by 3,000 soldiers and the fact that "God will be your guard". Only rarely did individual children show themselves able to make an indirect deduction from the test, for example: "I have learned that sailors' wages were low in those days" (Document 10); "I noticed that men slaves cost more than

women or children (Document 12) or "The plague gradually wore off in October, there were less deaths" (Document 18).

It was difficult not to score a mark or two from documents which were so full of fact, as one mark was given for anything relevant - a date, place-name, personal name or source. In answer to 2a, a simple quotation of the title of the document which explained adequately "What the document was about" was acceptable. For example, Document 8, though abstruse, is merely about "Early pieces and hand axes". The children's answers to this question covered an interesting spectrum which ranged from garbled misunderstanding through disjointed but acceptable phrases, quotations and titles to significant facts and occasionally to the main idea of the document. Many children could appreciate that Document 1 referred to politics in Dudley; Document 2 was "something about" law and order; Document 12 about the sale of slaves and Document 14, "something about" the government of the United States in 1776.

The most interesting result of this series of tests was the marked superiority of results with those documents which were illegible, that is slides of originals offered as Documents 13, 17 and 19. How did it happen that eleven year old children could offer more "fact" about an obscure object than they could with reference to a clearly worded text? Similarly, why were comprehension scores on pictures generally higher (without words at a younger age) than those for documents (with words) at a later age? The child's ability to conjecture and deduce from illegible evidence must sometimes be greater than his less experienced skill with reading and comprehension. The picture, the object, the charter, the hand-axe, offer him more chance of success, than does Document 12, if he reads "leaves" for "slaves".

Thus, Egyptian hieroglyphics ("Horrorgrificks" to one child) were more immediately recognisable from lessons and television than were the facts of an Apollo moon-mission. The many sensible descriptions of what could be seen (as opposed to those pupils who "can't give facts because I can't read it") suggested that "this was Egyptian picture-writing, probably from a pyramid or an obelisk". It was understood that symbols and pictures of animals were used as letters, that the document was thousands of years old and could probably be found in a museum, "or somewhere safe". The children saw that the "message" was carved or engraved in stone and was written in columns. It was conjectured that the story might refer to the life of Cleopatra or Tutankhamen; "it possibly shows a hunting scene or counting cattle"; it might come from the Valley of the Kings "when Egypt was a modern country".

Conjecture about the Black Prince's charter (Document 13) was also productive, but the "facts" offered gave evidence of observation of what could be seen and deduced, rather than what could be read. Acceptable comments included reference to the wrinkled parchment, the coat-of-arms, the seal, the Latin language or the size and shape of the manuscript. Conjecture ranged from the probability of royal origin, to monkish script, to taxes and feudal government, as it had in the earlier discussions of the feasibility trials. (8). The ultimate value of adequate language was seen to be supreme, for the child who could say "It's a medieval parchment with a seal", was at a complete advantage. Though many others may have appreciated the significance and value of the seal, to them it could be any of the following assortment of words:-

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8. The children's responses are examined in detail in Chapter Eight on pages 334 - 342

A peg, tag, badge, locket, pendulum, horseshoe thing, mould, book-mark, lock, roller, pendant, metal ring, paper weight, sort of button, coin, stone, tablet, round thing, dial, stamp, black thing, weight, old book-marker, medal, stop watch, ink-well, a shell or magnifying glass.

In the same way, the most marks were consistently lost in the case of Documents 8 and 19 by children who persistently described flint implements as "fossils", or, reflecting the continuance of immature speech: "thossils". Some of these children indicated by subsequent answers that they realized that the flints were hand-worked, not natural; in many cases it was impossible from the results of the test alone to decide whether adequate language, or lack of it, revealed or concealed an adequate understanding of the document.

The overall average of achievement by the pilot group was low, being generally below 50% success for authenticity and about 60% for time. High scores for time were to be expected, in that 11 of the 20 documents were more or less clearly dated. Even so, results of Question 7 are useful in reminding us that, though given a clearly dated document, there could be as much as 8 to 37% lack of success by some eleven year old children who could not accurately date a dated document. Generally, the pilot group maintained its previously consistent average of about 10% additional success compared with the control group. Their average for Authenticity is 47%, for Time 61% and for the document as a whole 50%. Comparable control scores are 35%, 52% and 39%. The computer print-out of the pilot groups mark register gives an average mark of 5.6/10, with 61% of the group achieving average marks or above.

That the children, as yet, were not too immature to face so searching a verbal test, is shown by the following tables of scores, document by document and group to group.

Fig: 33 TABLE XXII

DOCUMENT TESTS I - VI (1979-80): TABLE OF SCORES (%)

QUESTIONS:	1	2	3	4	5	A	6	7	8	Ti	Total
DOCUMENT 1:	Mr. Cobbett's Visit to Dudley Postponed (1832)										
Pilots:	68	26	73	72	46	46	61	74	79	71	52
Controls:	51	18	56	67	45	36	50	60	66	58	41
DOCUMENT 2:	Special Constables: Appeal to Capable Citizens (1926)										
Pilots:	72	22	70	75	50	44	64	76	84	75	52
Controls:	60	14	57	69	45	35	53	62	76	64	43
DOCUMENT 3:	How I escaped from Pretoria: W.S. Churchill (1899)										
Pilots:	71	29	66	73	44	46	62	75	77	71	52
Controls:	64	19	54	64	39	37	50	53	65	56	42
DOCUMENT 4:	Apollo 16 Launched on Moon Trip (1972)										
Pilots:	83	61	49	54	57	59	70	63	76	70	62
Controls:	79	53	49	50	46	54	67	63	81	72	58
DOCUMENT 5:	The Bayeux Tapestry (c.1087)										
Pilots:	49	@56	45	55	63	53	61	67	59	*62	55
Controls:	27	36	46	44	41	39	50	42	56	49	41
DOCUMENT 6:	Well Done the New Army: (1916)										
Pilots:	50	@25	46	26	39	33	64	81	65	72	43
Controls:	40	16	45	19	46	27	49	76	69	65	36
DOCUMENT 7:	The Centurion's Servant (1924)										
Pilots:	87	51	64	45	43	56	50	35	60	*48	54
Controls:	65	36	49	36	48	42	50	29	38	39	41
DOCUMENT 8:	Early Pieces and Hand-Axes (1956)										
Pilots:	85	@55	53	50	46	56	48	38	40	*42	53
Controls:	73	31	44	37	46	41	30	27	30	29	38

* In Ti. Column denotes an undated document
@ In Column 2. denotes an illegible document or one with no written text.

Fig: 33 (continued)

TABLE XXII

DOCUMENT TESTS I - VI (1979-80): TABLE OF SCORES (%)

QUESTIONS:	1	2	3	4	5	A	6	7	8	Ti	Total
DOCUMENT 9:	Set of Six British Coin-Rubbings (1890-1980)										
Pilots:	57	46@	56	57	68	53	66	37	54	52*	53
Controls:	46	34	45	42	45	40	53	31	45	43	41
DOCUMENT 10:	Scale of Pay for Sea Expedition (1588)										
Pilots:	47	40	57	51	56	48	72	89	75	79	55
Controls:	28	29	35	34	51	32	65	85	76	75	43
DOCUMENT 11:	Freemen! Avoid Conscription (1862)										
Pilots:	67	32	53	49	66	46	79	92	85	85	55
Controls:	37	17	39	32	51	29	63	88	81	77	40
DOCUMENT 12:	Sale of 503 Slaves (1784)										
Pilots:	63	29@	49	47	68	42	79	67	69	69	49
Controls:	45	16	29	32	51	27	64	56	60	60	35
DOCUMENT 13:	Charter of the Black Prince (1348)										
Pilots:	63	34@	72	60	83	53	73	24	28	42*	50
Controls:	53	12	51	33	67	32	51	8	19	26	31
DOCUMENT 14:	American Declaration of Independence (1776)										
Pilots:	66	29	44	42	75	41	75	92	78	82	51
Controls:	65	20	38	27	60	32	55	91	76	74	42
DOCUMENT 15:	Letter from Siege of Cawnpore (1857)										
Pilots:	86	26	57	42	79	45	76	91	83	83	54
Controls:	76	21	45	34	56	36	69	91	81	80	47
DOCUMENT 16:	Letter of Joan of Arc (1429)										
Pilots:	78	30	61	44	68	47	77	14	20	37*	44
Controls:	67	15	52	30	58	34	66	3	10	27	32

Fig: 33 (continued)

TABLE XXII

DOCUMENT TESTS I - VI (1979-80) TABLE OF SCORES (%)

QUESTIONS	1	2	3	4	5	A	6	7	8	Ti	Total
DOCUMENT 17:	Egyptian Hieroglyphics (C.4000 BC)										
Pilots:	83	61@	61	49	78	61	71	56	58	62*	62
Controls:	76	61	47	28	64	44	58	44	49	50	46
DOCUMENT 18:	Pepys Diary (1665)										
Pilots:	74	43	52	48	64	60	81	29	45	52*	52
Controls:	70	22	32	39	66	35	71	19	43	45	37
DOCUMENT 19:	Prehistoric Flint Implements (C.10,000 BC)										
Pilots:	73	34@	66	48	77	59	78	56	34	56@	52
Controls:	50	13	52	37	68	33	62	39	28	43	35
DOCUMENT 20:	"Letter from Julius Caesar to Brutus" (1980)										
Pilots:	86	37	66	41	54	59	45	51	31	43	48
Controls:	80	18	42	24	37	31	19	41	17	26	30
AVERAGES:	All Documents 1-20										
Pilots:	70	37	52	46	61	47	67	55	60	61	50
Controls:	57	24	41	34	51	35	55	46	54	52	39

Where documents were relatively familiar, for example, a newspaper extract, or extremely difficult, for example, the Cawnpore letter (Document 15), both pilot and control schools' marks approximate more closely to the mean. As before, in terms of Time, it was occasionally possible for the control schools to take the advantage (Documents 4, 6 and 10); in only two cases, (Documents 5 and 6) were the control groups' scores marginally superior in a detail of Authenticity. In no case does their overall total of any section exceed that of the pilot schools. As we have observed, an occasional object-as-document (Documents 13, 17 and 19) gained significantly higher marks than more legible items. Comparison of the results of Documents 8 and 19 is interesting in that these are two forms of record for similar prehistoric objects. Both groups were more able to identify the book illustration and describe it (Questions 1 and 2) than was possible with the slide; conversely, both groups appreciated the "time" of the original objects more accurately than that of the secondary text-book. The low result with Document 6 was probably due to the marker's prejudices, which prevented him from accepting the Punch cartoon as reasonably "authentic" in reflecting the action on the Somme while the children took the sentiment expressed at face value. The two best results of all were achieved with Document 4, the newspaper extract and Document 17, columns of Egyptian hieroglyphics.

Generally speaking, the children's major weakness is revealed in their response to Question 2; description of the content of some of the later documents was perfunctory. On

the other hand, their ability to rationalise the authenticity of each document was usually of a higher order, in both groups. Their recognition of the type or medium of the document was, as with the pictures, of the highest order and their understanding of the technical terms, "facsimile", "transcript", "primary", "secondary", etc., is reasonably well reflected in a high order of scoring for Questions 3 and 5.

Predictably, the children's recognition of documents is most effective with more familiar items - newspaper, children's Bible, familiar coins, prehistoric tools and hieroglyphics than with some clearly printed but unfamiliar facsimiles such as Documents 1, 2, 3, 10, 11, 12, 14, 15 and 16; undated facsimiles of manuscripts (Nos. 12, 14 and 16) were most difficult of all. It was disappointing that all the Pilot schools' experience with earlier pictures did not appear to have ensured easy recognition of the Bayeux Tapestry (Document 5) the Charter (Document 13) or Joan of Arc's Letter (Document 16) though this applies more to their medieval time-sense than to their ability to say what the document was. Joan of Arc gained ground because of recent work about her in both Pilot and Control schools; this also applied to current work on Egyptian hieroglyphics and some recognition of Pepys's Diary.

The first requirement of authenticity, after the prompt recognition of the type of document (Q.1) w as the ability to state its content briefly and cogently (Q.2). The question, now in two parts, carried eight marks in all, four for recognition of the document's subject (Q.2a) and four for any salient facts in or about the text (Q.2b). In marking this question, the full eight marks was rarely awarded, being kept in reserve to identify exceptional answers. Paradoxicall , this could be either a mature, formal statement in a gifted child's own words, or quite simply, the judicious quotation of a title or headline or a simple statement. Regrettably, the second case proved to be the rare exception.

As had been seen in the study of pictures, this was the children's major deficiency in skill, the ability to write a simple sentence containing one or two essential facts.

Reluctance merely to quote the title was inexplicable. Simple transpositions such as: "Mr. Cobbett postponed his visit to Dudley"; "The Metropolitan Police appealed for volunteers as special constables"; "Winston Churchill described how he escaped from Pretoria"; "The newspaper records the Apollo 16 moon mission"; "An Act of Parliament for repairing several roads leading from Birmingham"; "The story of Jesus and the centurion's servant" - would have gained four marks. In all cases, however, the total score was restricted to seven marks, including one for any three facts.

The full score was reserved for those children who, fortuitously, recognised exactly what the subject of the document was when this was not clearly stated. For example, those children who stated: "Winston Churchill's escape during the Boer War" (Document 3) "The Bayeux Tapestry" (Document 5); "Scale of pay for the Navy at the time of the Armada" (Document 10); "A recruiting poster from the American Civil War" (Document 11); "The American Declaration of Independence" (Document 14); "A letter from Joan of Arc" (Document 16), or "The diary of Samuel Pepys" (Document 18) gained an outright eight marks. In some cases, outright recognition was almost impossible; for example, no child could be expected to know that Document 1 refers to the Reform of Parliament or that Document 13 is a charter of the Black Prince (two in fact did name him). In those cases, any close approximation to the truth was accepted for the full score. For example, a few children identified Document 13 as Magna Carta; the answer "A letter from a medieval King with a royal seal on it" was also totally acceptable. Exceptional

answers to Document 1 appreciated that an important law was about to be passed in Parliament. Outright recognition scores illustrate clearly which traditional subjects of British History are more readily recollected by modern Primary school children. The results of counting all '8-scores' for Question 2, where this is applicable, were as follows:-

FIG. 34 TABLE XXIII. DOCUMENT TESTS I - VI (1979-80)
TABLE SHOWING PUPILS' RECOGNITION OF MAJOR EVENTS
(Percentages)

Doc.No.	Event	Pilot	Control	Total
DOC.1.	The Reform Bill 1832	1.0	0.5	0.7
DOC.2.	The General Strike 1926	1.5	0.25	0.9
DOC.3.	The Boer War 1899	0.5	0	0.3
DOC.4.	Apollo Moon Trip 1972	14.4	6.7	11.1
DOC.5.	The Norman Conquest 1066	12.1	1.4	7.9
DOC.6.	The Battle of the Somme 1916	1.4	0	0.9
DOC.7.	Life of Christ C.33AD	5.4	0.7	3.3
DOC.8.	Prehistoric Man C.10,000BC	12.0	0.6	6.9
DOC.9.	Reigning Monarchs 1890-1980	3.7	0.6	2.3
DOC.10.	The Spanish Armada 1588	1.5	1.3	1.4
DOC.11.	The American Civil War 1862	4.7	5.0	4.8
DOC.12.	The Slave Trade 1784	4.2	0.5	3.3
DOC.13.	The Black Prince 1348	2.0	0	0.1
DOC.14.	American Independence 1776	7.0	4.5	5.9
DOC.15.	The Indian Mutiny 1857	0.6	1.1	0.9
DOC.16.	Joan of Arc 1429	7.9	0	4.3
DOC.17.	(Hieroglyphics) 4000BC	54.5	30.4	43.3
DOC.18.	Pepys Diary 1665	8.2	1.8	5.6
DOC.19.	Prehistoric Man C.10,000BC	4.9	0	2.8
DOC.20.	"Julius Caesar" 1980	15.2	6.1	11.4

The generally low figures for Question 2 reflect as much a level of linguistic inability as any extent of knowledge. It can be assumed that for any child to have made a statement of sufficient adequacy to be included as "recognition" indicates the expression of the total amount of essential fact required, in a form which would be expected from an intelligent adult. Occasionally, the fortuitous use of the exactly correct word - "hieroglyphics" in the case of Document 17 - could produce the full effect. Conversely, the almost total misuse of the word "fossil" accounted for the control group's failure with Document 19. In other cases, the acquisition by the Pilot group of sufficient specific words - for example "medieval manuscript" for Document 13 - gained a few able children a significant advantage.

It was predictable that few Primary school children would be aware of the Boer War or the Indian Mutiny; the surprisingly low result on the miracles of Jesus (Document 7) merely reflects a widespread inability to make a simple effective sentence such as "This is the story of Jesus and the centurion's servant". Similarly, very few children were able to describe Document 9, simply as "a set of six British coins from different reigns". Relatively high results for Joan of Arc by the pilot group, the Pharaohs (both groups) and Samuel Pepys' diary; (a statement only on the Plague of London was inadequate for 8 marks) certainly reflect current projects and television programmes for schools. Knowledge of the American Civil War (Document 11) and the Declaration of Independence (Document 14) probably owe more to American films and television at home. In any case, one can assume that the figures in Fig 33 define a relatively gifted response, equivalent to "formal operational reasoning" or Hallam's stringent requirements of logical thought in adolescents.

Occasionally, though rarely, a considerable amount of

knowledge or a high degree of empathy was recorded in the confined space of the answer sheet. For example, in describing Document 13, one boy wrote: "It is a photograph of Magna Carta with the royal seal, the original document written on parchment, the first letter decorated with the royal insignia and sealed with a large heavy seal". With reference to Document 14: "A declaration from the U.S.A. in 1776 about its independence from the British government with the British monarch George III. The meeting was adjourned and America fought for independence". On Document 12, factually: "The owners of cotton plantations in the south used slaves to harvest the crops. The people in the north tried to prevent this, because of this argument the American Civil War broke out" or, with feeling, on Document 12: "503 slaves - the cruelty of it, sold like animals to do work just because they was black, treated like apes who are trained to become domestic". One child compared the hieroglyphics of Document 17 with Cleopatra's needle in London and there were several references to the Valley of the Kings and Tutankhamun - "probably on an obelisk or tomb": "Hieroglyphics inside an Egyptian pyramid. Most of the paintings were of Osirus. He was the god of the sun, and of all the gods. The Egyptian pyramids were made of solid stone". The letter from the siege of Cawnpore created the most frequent empathetic responses: "The person who has written this letter thinks he is going to die". "These are probably his last words"; "A soldier would not lie about anything as terrible as that"; "It is real and sad".

It is apposite at this point to enquire more closely into the source and nature of this general knowledge. Some critics have asserted that the Dudley project was unrealistic in setting a high premium upon the value of children's personally acquired knowledge. Had knowledge not been taught, how could they have acquired or understood it? "You cannot expect children to snatch material out of the air" was a typical

observation at a D.E.S. conference in July, 1980. This contention can, in fact, be answered in some detail.

In the course of marking all tests, of sequence-pictures, slides and documents, from a very early stage, a form of letter was devised, to be sent individually to any pupil who excelled in the cogency of his answer. The letter quoted the child's description and asked for the source of his knowledge, whether from book, comic, film, lesson, or family visit. Unfortunately, the letter did not distinguish between television programmes at home or in school but the children's answers usually made this clear. There was space in the letter for the child to expand upon his interest in the subject in question and additional comment by the class teacher was invited. During the full course of the project, 517 of these letters were returned by children in both Pilot and Control groups (8). The subjects most frequently cited, with an analysis of the five possible sources offered were:-

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8. The children's responses are examined in detail in Chapter Eight, on pages 334 -341.

Pig: 35

SOURCPS OP CHILDREN'S INPORMATION AND KNOWLEDGE

TABLE XXIV

Terms as used by pupils	1 Lesson in School	2 School Book	3 Book or Comic at home	4 TV.pro-gramme or film	5 Family visit Hobby or int-erest	6 Don't Remem-ber	Total Responses
Fire of London and Samuel Pepys	44	18	24	25	1	5	117
The American Civil War	5	9	19	27	1	3	64
Various sold ers, inclu-ding: Dragoons, French troopers, Napoleon's soldiers, cross-bowmen, knights, Redcoats, Zulu warrior Philistines.	12	5	18	20	7	2	64
Joan of Arc	25	10	9	4	0	0	48
Ammonite, stegosaurus, prehistory, stonehenge, cave paintings.	11	2	10	8	3	1	35
Famous people, including: King Arthur, Athene, Saint Bernadette, Helen of Troy, Alexander the Great, Guinevere, The Black Prince, Becket, James Wolfe, Marlborough, Dick Turpin, The Brontes, The Tsar.	4	1	12	12	1	4	34

Fig. 35 (continued)

SOURCES OF CHILDREN'S INFORMATION AND KNOWLEDGE (continued)

TABLE XXIV

Terms as used by pupils	1 Lesson in School	2 School Book	3 Book or Comic at home	4 TV. programme or film	5 Family visit Hobby or interest	6 Don't Remember	Total Responses
Museums, castles, vintage cars, jewellery, steam trains and old aeroplanes, Flying Scotsman, G.W. Railway, steam engines and inventions.	8	1	6	9	8	1	33
Ancient Civilisation, Assyrians, Persians, Philistines, Palestinians.	4	4	14	9	0	1	32
H.M.S. "Victory"	2	1	5	14	8	0	30
Ancient Egypt: Pharoahs, pyramids and hieroglyphics.	7	4	5	11	2	0	29
Edward VII (and other Royal Family).	1	4	10	12	0	1	28
Ancient Greeks and Romans: Coliseum, Acropolis, Temple of Diana at Ephesus, Odysseus.	4	5	7	5	6	0	27
"The Laughing Cavalier"	1	1	7	11	5	0	25

Fig: 35 (continued) SOU^ES OF CH'LD FN'S INFORMATION AND KNOWLEDGE (continued) TABLE XXIV

Terms as used by pupils	1 Lesson in School	2 School Book	3 Book or Comic at home	4 TV. programme or film	5 Family visit Hobby or interest	6 Don't Remember	Total Responses
Useful words: illuminated letter, mosaic, tavern, mural or fresco, aerodynamics, clipper ship, windlass, manuscript, sarcophagus.	9	2	3	5	0	1	20
Georgian family:	6	6	0	6	0	0	18
Famous Events: Magna Carta, Wars of the Roses, Agincourt, Crecy, Bayeux Tapestry, Blenheim, San Fransisco earthquake, Chicago fire, Jarrow Crusade.	4	2	4	4	1	0	15
First and Second World Wars, D.Day, etc:	0	1	3	6	2	0	12
American Declaration of Independence:	0	1	3	6	2	0	12
The Spanish Armada:	0	2	1	4	0	0	7
Black Holes in Space, intergalactic explosions etc.	1	0	0	3	0	2	6

Fig: 35 (continued) SOURCES OF CHILDREN'S INFORMATION AND KNOWLEDGE (continued) TABLE XXIV

Terms as used by pupils	1 Lesson in School	2 School Book	3 Book or Comic at home	4 TV.programme or film	5 Family visit Hobby or interest	6 Don't Remember	Total Responses
Total Responses:	148	79	160	201	47	21	656
Percentages:	23%	12%	24%	31%	7%	3%	100%

School sources: 35%, from lessons, topics, school visits, school TV programmes, assemblies.

Other sources: 65%, from TV, comics, books, parental information, hobbies, interests, activities, collections, family visits, etc.

During in-service training meetings with teachers, it was necessary to clarify views on what criteria were most acceptable to justify the "authenticity" of any document as offered by each child in answers to questions 4b. These ranged across the entire Piagetian spectrum from utterly false non-answers to quite highly developed formal operational reasoning. At the lowest end of the scale, the typical answer was usually "Because it is true". Another frequent low-level response was mere repetition of the facts which the document proffered. For example: "Because the Americans did go to the moon", "Because there was a Winston Churchill" or "Because Sir Francis Drake really lived". Sometimes it was not possible to discount this type of reasoning altogether. For example, in response to Document 14, "The Declaration of Independence", it is, perhaps, legitimate to say that the document was authentic "Because America is now independent".?

Another misleading argument, never credited with a full mark, was an over-confident acceptance of the omniscience of the medium transmitting the message. For example: "It is true because it is in the Bible"; "Because it is in the newspaper"; "Posters have to be true"; "Actual things can't be wrong", or "Because Winston Churchill would not tell lies". Children were discouraged by their teachers from relying on this response. Yet there could occasionally be merit in this type of reasoning. How, for instance, does one mark the assertion of a child who believes that it must be true: "Because a man would not lie in a letter to his wife" or, more subtly, "You do not usually tell lies in your diary"? In the case of Document 15, for example, the fairly frequent response "The document is authentic because the person is about to die and will therefore tell the truth" was given full marks. Returning to the relative worth of the type of publication, one usually offered a consolation mark for such rationalisation as "Because its in the Daily Telegraph, which is usually reliable", or "Because the reporter was there and tells you his name".

Official documents were usually accepted as worthy of a high degree of credibility. Here again, caution was necessary; the simple answer "Because Government's documents always tell the truth" is ingenuous. Yet, some official documents such as Documents 2, 10, 11 or 13, are indeed authentic because they are official. As one sceptic remarked on the Confederate Army recruiting poster "It is true, because why would anyone want to fake it?" As before, in the previous series of tests, it was emphasised to teachers and children alike that adequate discussion of such a proposition was more essential than endeavouring to find an unfailingly "right" answer. It was pointed out to the sceptical boy and his class that some documents might have greater inbuilt reasons for exaggeration, falsehood or forgery than others. One might argue, for instance, that ephemera a e rarely worth a forgery; though nowadays much ephemera is sold in reproduction form. It is not an easy question to answer.

Usually, the children were encouraged to find more than one acceptable criterion which could be cross-referenced; for example, documents such as Numbers 1, 3, 11 or 16 which bear an identifiable signature or details of an otherwise reliable source (e.g. the Metropolitan Police) and are reasonably dated, could be held to have passed a double test. Paleography, style, vernacular, and technical vocabulary were also accepted as legitimate indications of authenticity. This nearly always applied to such answers as: "Because they wrote like that in 1776", or "Because they did write in Latin in the Middle Ages".

Yet traps were always awaiting the unwary. How, for example, did we judge the answer "This document is authentic because it looks right"? What implications does the child assume in offering this answer and will the value of that

answer vary from one document to another? For example, does the trite Punch cartoon portrayed in Document 6 "look right" as a reliable version of the horrors of the Battle of the Somme?; or as a reliable version of a "Punch" cartoon? Does not the medieval charter shown in the slide as Document No. 13 fully justify our realisation that it does, indeed "look right"? In fact, to justify the charter, attention to at least the seal and preferably to both seal and royal coat of arms was required to gain full marks for this question; these are, indeed, reliable tokens of a medieval document's authenticity.

Sometimes, though rarely, children remarked on the possibility of counter-checking the document against other available sources. The most frequent response of this type: "I know that this is true because I have seen similar examples in books or on television" was acceptable, as was the answer "Because you can see them in museums" or "You could go and look it up". Corroboration from work done in school was always accepted as reliable; for example, "We have studied this in a topic at school".

A disturbing trend in some of the children's regular responses to the demand for reasons for their judgment of authenticity was the use of prepared formulae, unthinkingly used. These took several forms and occasionally any of them might become undesirably familiar in a series of papers completed by the same child or class. Typical of these formulae were: "Because everything seems right"; "Because all the facts are there"; "Because it tells you everything"; "Because it has not been changed at all"; "Because it is detailed". Once a child had experienced some success and possibly a teacher's well-meant encouragement by using such a phrase, it might be repeated again and again, often when "all the facts" were missing or when the document by no means "told you everything". These formulae were the more difficult

to discount if the reason given was, in any other respect than its meaningless repetition, a suitable one. For example, "It's authentic because it has all the people's names"; "Because it was written at the time"; "It describes things clearly and honestly" or "It's an eye-witness account" might be genuine responses in some cases but spurious in others. Other "stone-walling" responses included:- "Because I think it is"; "Because it is there in front of me" or "Because of its appearance". "Can't tell, because I can't read it" was, in some cases, as for example Documents 13 and 17 a legitimate response, fully marked. As one child wrote, succinctly: "Just look at it" (Document 13).

One of the most ingenuous responses, difficult to fault, was that of the patently honest child. For example:- "They would not go to all that trouble for nothing"; "Why would they lie about it?"; "Who would want to fake it?"; or, more significantly; "Why would he lie when he was certain to be killed or captured?"; "Because a soldier would not lie about anything as terrible as that". Sternly sceptical in response to Document 15, one boy reasoned: "The man would not dream of an imaginary Henrietta when he was supposed to be fighting, it would be wasting time". A more ingenious idea about the Confederate Army recruiting poster (Document 11) was:- "Because if he had put the poster up he could not lie to them when all the people came" or, in the case of Document 10: "They couldn't lie about the sailors' wages because they had to pay them the right money". Even more intractable with reference to the paleolithic hand axes (Document 8) was: "It must be authentic because they cannot rub out stone".

There was a danger, as with some of the earlier pictures and museum objects, of over-stressing the possibility of "faking" and "forgery" and thus over-stimulating an unnecessarily doubting response. After all, as in previous tests, almost everyone of the examples was authentic; there

was rarely any need for the author to lie. It was possible that the children were in danger of confusing authentication, that is, the necessary checking of a document's provenance and its format, with a more negative search for deliberate deceit. We constantly needed to remind ourselves of the dictionary definition of "authentic", that is:-

> "1. Of authority, authoritative; entitled to obedience or respect.....3. Entitled to belief as being in accordance with, or as stating fact; reliable, trustworthy, of established credit. 4. Original, first-hand.....5. Real, actual, genuine.
> 6. Really proceeding from its reputed source or author; genuine". (9)

During the course of marking the third and fourth of the series of document tests, it was decided to attempt to classify and account for well-defined categories of response to Question 4; in order to discover whether it was possible to discern different types of thinking about the problem of authenticity. It was inevitable that one thought in terms of Piaget's schema as had other, earlier researchers into children's concepts of historical time (10). Of most practical value, though concerned with adolescent children's responses, was R.N. Hallam's article "Logical thinking in History" (11). Hallam tabulated a set of criteria for use

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9. Shorter English Dictionary: Clarendon Press, Oxford, Third Edition; 1978. p.134.

10. e.g. A Study of Development of the Concept of Time in Children: Kathleen Henry. M.A. Thesis, University of Liverpool: 1960.

11. Logical Thinking in History. R.N. Hallam. Educational Review, University of Birmingham. Vol.19. 1966-7.

in classifying pupils' modes of response. In all, he defined a nine-point scale for five interlocking stages. His definitions of the three major stages of development were (1)pre-operational reasoning: fails to relate the question to information, not looking for possible contradictions; isolated centredness on one feature only, transductive and syncretic process;" (2) "concrete operational reasoning: able to give an organised answer, limited to the text. Forecasts a result from evidence. Compensates or negates but is unable to co-ordinate these;" (3) "formal, operational reasoning: holds certain factors constant, varies other systematically in order to discover which explanations are true, makes hypotheses, then confirms with data. Reasoning by implication at an abstract level." Before this final stage, at a transitional development from the concrete optional stage, the child "goes outside known data, forms hypotheses and begins to relate variables". Thus, with reference to a bible story (Document 7) at the first s age, a child might reason "It is a bible story" or "bibles do exist" or "there was a man named Jesus". At the second stage, the child's thinking develops to "it says something like this in my bible"; or "we know that Matthew, Mark, Luke and John wrote parts of the bible" or "it mentions the names of places which do exist". More formal reasoning, suggested: "Many people are now Christians so it is probably true"; "Scholars wrote it so that it would be fairly accurate"; or "because the story has been passed on from when it happened". Similarly, in the case of a set of coin rubbings (Document 8) the child, at the first stage, suggests "The coins have heads on" or "they are pictures of the real thing". At the next stage, this develops to "I have seen some of these coins" or "They have been actual, national currency" or "If they were not (authentic) we would not have money". At the third stage, we find "No, because Edward the VIII was never King" or "Coins have to be accurate to be used" or, elliptically: "I collect coins", ("...and therefore have

evidence and knowledge to support my decision").

In content, the passages used with pupils by Hallam, on Mary Tudor, the Norman Conquest of England and the Civil Wars of Ireland, were more formal text book examples than the everyday documents used with eleven-year olds in Dudley. Even so, Hallam's question: "Do you think that William of Normandy was a cruel man?" (answer "Yes", "No", "I don't know", or "I am not sure",) followed by the associated question in each case: "Why do you think this is?", was similar to question 4 in the Dudley test. Most of Hallam's questions are comprehension tests or moral judgments:- "Was it right to carry out such a severe punishment?" Hallam's use of such terms as "just", "right" and "cruel" expect a far higher level of moral judgment from inert factual material than one would normally wish to see in Secondary school history lessons.

It could be argued, on the one hand, that the documentary test's question was in one sense simpler or more consistent, in that it was concerned with a single decision, always the same: "Authentic or not?" or more simply: "true or false?" Conversely, it could be argued that this apparent simplicity is deceptive, that the single concept required of the younger children is, in fact, more demanding than comprehension or re-arrangement of a relatively explicit text. One notes that the Schools Council Project 8-13 (12) carefully avoided the over-simplification of "true or false?" in listing its main key concepts, though the question "Is the source of the

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12. Curriculum Planning in History, Geography and Social Science. (Place Time and Society 8-13). Alan Blyth et. al. Collins-ESL Bristol for the Schools Council. 1976. pages 91-110.

evidence reliable?" could be raised by the teacher in the course of the "Clues" Unit (13).

The document test offers too little space for the child to develop his line of reasoning on a single dotted line (14). Often, one became aware of the frequently elliptical responses of the normal "concrete reasoning child". He assumes that we understand the implications of his brief answer. Thus, "it looks real". (....."compared with other books I have seen"); "The information seems right" (..... "that is, similar to other information which I have been given and remember"); "I know that there were coins for each King and Queen" (....."and these add to my experience of sort of similar evidence"). As we have seen before, the transition between inadequate and legitimate response is frequently narrow. "It is authentic because it is true" is a statement in a different category from "Can't tell because I don't know if it is true" or "It is out of the Bible and it looks reasonable". "But the best method to employ is to analyse the nature of the proofs that he employs for justifying his conclusions. If they do not go beyond observation of empirical objects placed in it, then we may infer that he is operating concretely. If on the other hand, he uses a proof that employs the construction of combinations that are not represented in the objects before him, or if he constructs a relation that is not given in the properties of the objects ....then we may assume that he is operating formally or propositionally" (15). Certainly up to 10% of the propositions made by the children in authenticating the documents go beyond mere class-inclusion.

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13. Place, Time and Society 8-13: F.A. Thompson. History Teaching Review (The Journal of the Scottish Association of Teachers of History) April 1980 page 13.
14. The test paper is reproduced in facsimile in Appendix IV on pages 464.
15. Inhelder and Piaget's "Growth of Logical Thinking" J.S. Bruner p.366.

Referring to two sets of tests which included printed facsimile extracts from the children's bible, a page of archaeological drawings of paleolithic hand axes and a set of coin rubbings, the scale of pay for British sailors at the time of the Armada, a recruiting poster for the Confederate States Army in the American Civil War and a business document recording the sale of 503 slaves imported to Kingston, Jamaica (Documents 7 to 12) 584 sets of papers were analysed by random choice. Hallam's five stages were condensed to his main three and every answer given by the children was placed in one of those three sets. Unwittingly, this process had previously been anticipated, in 1975, in marking the results of 4,000 scripts written by the 10 to 11 year age group in Dudley on the subject of "Long Ago". The results of this exercise were recorded in an unpublished L.E.A. working paper. (16). Then, the children's written essays were divided into three main categories "Negative responses", such as immature, personal reminiscences or fantasy, "Reasonably accurate positive response" and "Mature ('A') scripts". These categories more or less conform with those required by Piaget and Hallam in assessing children's responses. The results of the earlier written exercises provide a useful comparison with the findings of our analysis of the documentary test.

The tests' analysis showed that concrete operational reasoning was predictably, and rightly, the dominant mode of eleven-year-old reasoning about the authenticity of given documents. 12% of the sample were unable to make a sensible

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16. The Child's Awareness of the Past: John West. Dudley L.E.A. Curriculum Working Paper. Dudley Teachers Centre. Autumn 1975.

answer to the question; a further 26% offered trite and inadequate answers. Of these, the major single type of response was "It is authentic because it is true". Equally, unreasoning was the "Because it is in the bible" type of answer or "Because cavement did have tools".

The majority (58%) of the sample gave factual, meaningful answers to the brief question. The easy key to success appeared to be reference to one or more details of corroboration, either internal or external to the document. For example, "It mentions names of places which do exist" or "I have seen it in another book" or "It gives the date and the name of the writer". Only 4% of the answers could be classed as formal operational thinking. Occasionally, apparently concrete reasoning might conceal more extensive thinking, for example: "the stone tools have chips in them and I think they are authentic" or "because they are shaped like things we have today". The more formal thinkers developed certain basic ideas skilfully, for example, the assumption of the reliability of scholarship in an expert field, the essential nature of the eye-witness or the probability of such a witness's existence; "It's about Jesus and someone could have been there".

The comparison with 1975's results is startling, for the match of the two sets of grades is exact. In both cases, there were 4% "gifted" responses, there were exactly 58% "reasonably accurate" answers in both cases and exactly 38% of negative or inadequate attempts. It is significant that three years of a special syllabus had not changed the basic ability of a sample of the same age in 1980 as in 1975, in terms of their conceptual power or innate reasoning ability. No amount of time-lines, tests, stories, discussions, lessons or projects appear to change the child's ability to express his deductions in an adequate verbal form. What had changed,

and that remarkably, was the pilot group's development of skills; for example, of linguistic expression, specialised vocabulary or ability to sequence recognisable items, more particularly in picture form. Even so, it is too simple to say, as does Piaget of all children, that "Somewhere between 12 and 14 years of age, with the development of ability to reflect upon thought itself, the adolescent begins to show the marks of formal thinking".

Many subjective responses implied sufficient depth of thought not to be ignored; for example, "because the details are hard not to believe"; "because the people who read it would know"; "Because it gives the feeling as if you were there"; "because it is a personal matter"; or "because it is a copy of the original". One was prejudiced in favour of empathetic response. For example, with reference to Document 15 (the letter from Cawnpore) "Because this was sad"; "Because it has a lot of feeling words" and "It was written with thought and soul" are too understanding to be dismissed lightly or left unmarked.

In the last resort the main criteria for the children's understanding of authenticity included:- the appeal to obvious antiquity (the wrinkling of the parchment, the cracks in the wall of an Egyptian tomb, the calligraphy of the manuscripts); the recognition of detail which would be capable of corroboration (dates, place-names, personal names, signatures, official states) and the appeal to superior scholarship or reliable provenance, (professors of archaeology, museums, eminent politicians or government departments). The importance of the eye-witness was always accepted wherever relevant. This raised an interesting problem as to whether children who denied the authenticity of a document (e.g. Documents 8, 14, 15 and 18) because no names or signatures are given, should also receive credit for their judgment. Reasonable reasons though given inaccurately, were often

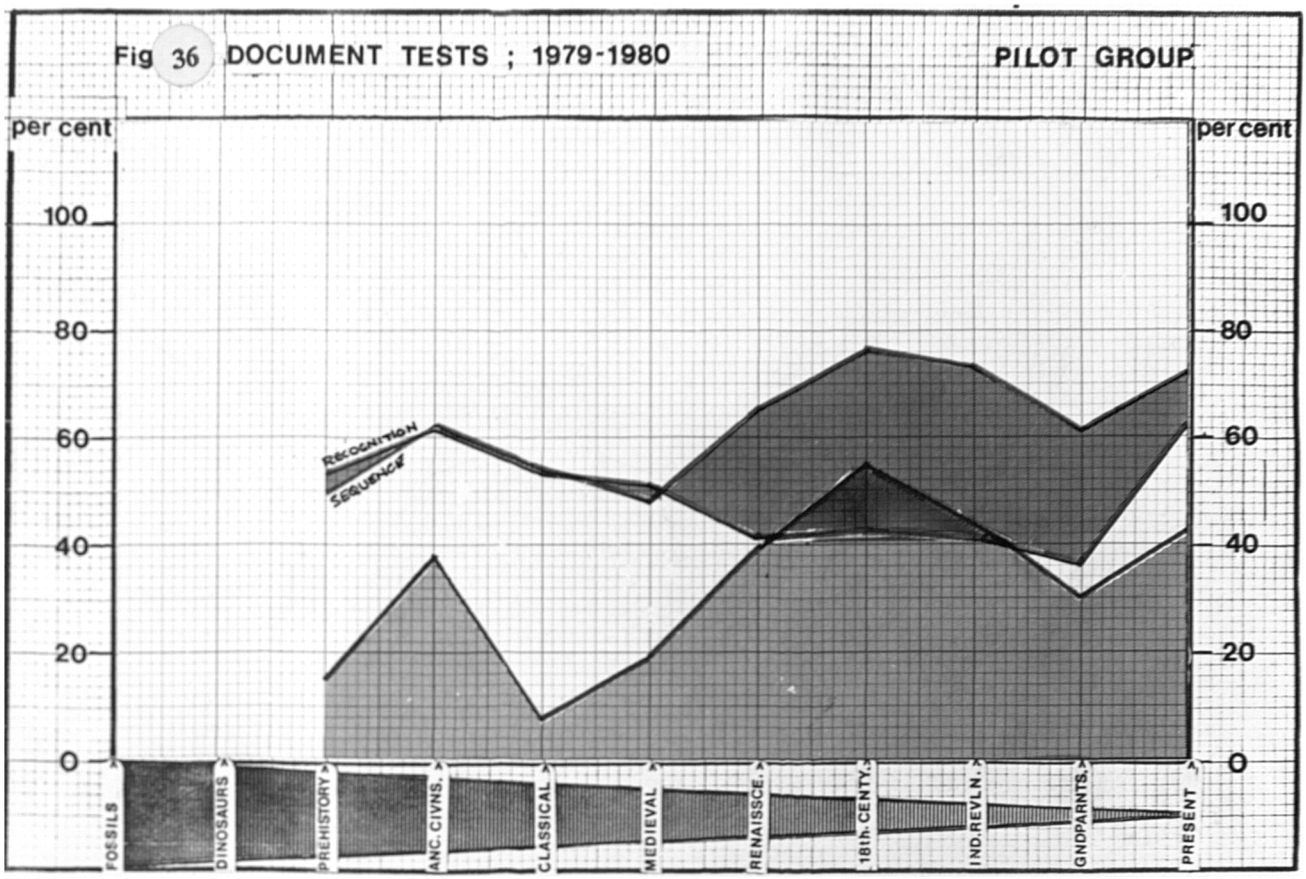
Fig 36 DOCUMENT TESTS ; 1979-1980
PILOT GROUP
per cent
per cent
100
80
60
40
20
0
RECOGNITION
SEQUENCE
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

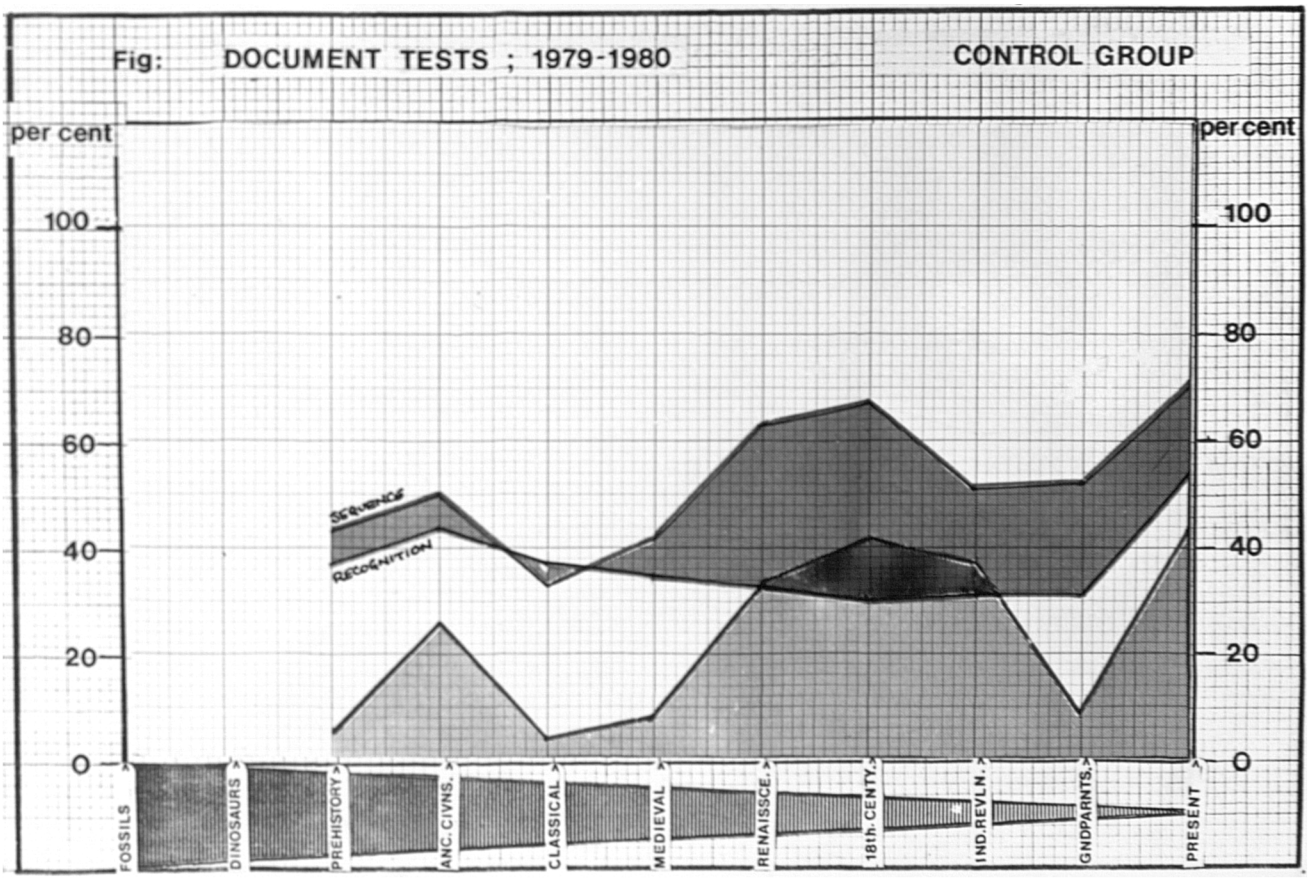
Fig: DOCUMENT TESTS ; 1979-1980
CONTROL GROUP
per cent
per cent
100
80
60
40
20
0
SEQUENCE
RECOGNITION
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

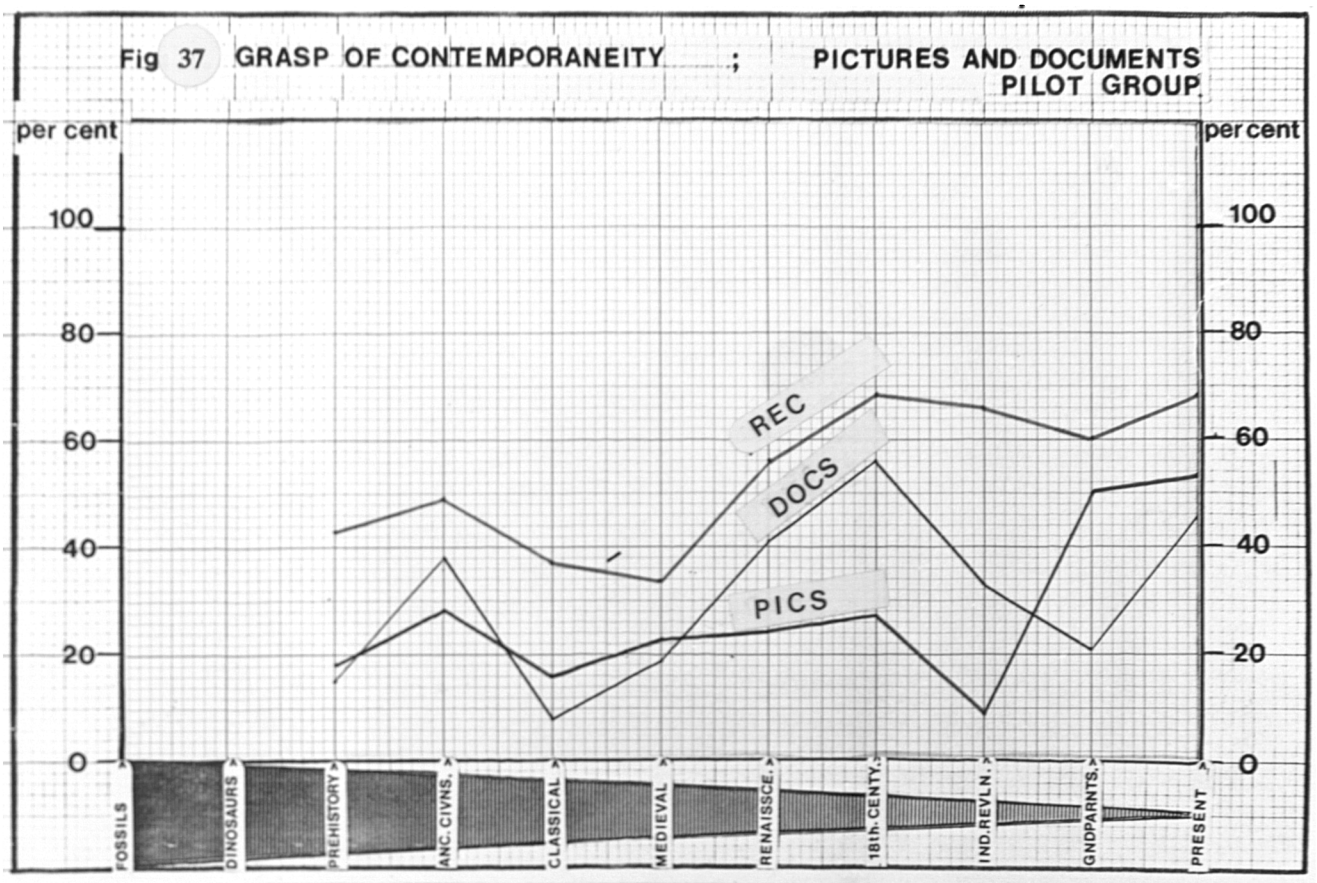
Fig 37 GRASP OF CONTEMPORANEITY ; PICTURES AND DOCUMENTS
PILOT GROUP
per cent
per cent
100
80
60
40
20
0
REC
DOCS
PICS
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

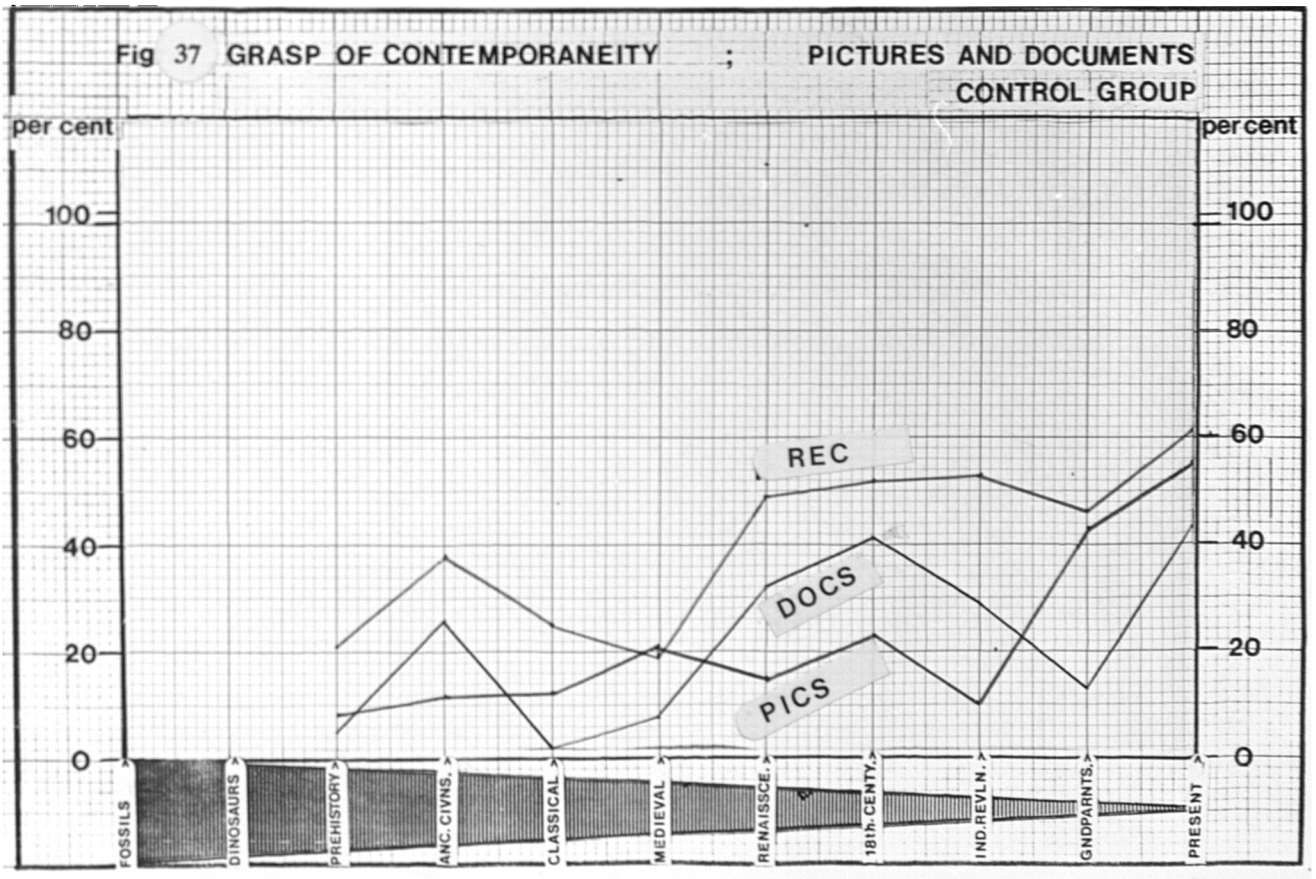
Fig 37 GRASP OF CONTEMPORANEITY ; PICTURES AND DOCUMENTS
CONTROL GROUP
per cent
per cent
100
80
60
40
20
0
REC
DOCS
PICS
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

difficult to ignore. How, for instance, does one judge the reasoning of a child who rejects a document "because I find it difficult to believe"? Similarly, the confirmation by reason of style was often effective. It was difficult to give credit to those children, now eleven years of age, who accepted Documents 12, 13, 14 or 16 because of their "funny" writing though this was possibly perceptive. In the case of Document 12, however, "Because they wrote in joined writing in those days" or, with reference to Document 14, "It has been written with a quill pen" or, Document 16, "This is how they wrote in medieval times", were acceptable. How then, was one to judge, on Document 17, "Egyptians wrote like that"? "Because of the writing" was always taken as an elliptical way of noting authentic calligraphy, as was "It is in the proper words" or, possibly, "Because it sounds right". The most persistent references to the hand-writing of manuscripts were aimed at Document 14, the American Declaration of Independence. Many children took exception to the roughness of the Representatives' draft. Such comments as "unreadable and untidy", "messy", or "scruffy" were repeatedly used. It was interesting to note that in less mature judgment, untidiness was evidence of the document's unreliability ("American Government would not write so messily"). More formal reasoning produced the frequent answer that, being a rough draft, the manuscript was evidently authentic. Finally, the argument of corroboration by a match with previously known evidence, (school projects, encyclopedias, lessons, books, television or film) was always allowed.

The poor results for the "Temporal absurdities" test (Document 20) was disappointing, being not far removed from the previous findings of Oakden and Sturt and N.C. Bradley

with unprepared groups (17). The formers' test was also a set of anachronistic references to Julius Caesar, the second, a short story about a Maori tribe, with another passage almost identical with Oakden and Sturt's on Julius Caesar. The Caesar passage, a piece of about 150 words, contained twelve absurdities similar to those contained in Document 20. There was reference to modern months, Caesar's top hat, Jesus, Saxon weekdays and several other inconsistencies. Oakden and Sturt's sample included 358 children, in groups numbering from 24 to 71 and aged from eight to fourteen. Bradley's population comprised fewer children, 176 in all, aged from eight to thirteen in groups numbering from 17 to 49. In both cases, the test results were averaged, year by year. At a similar age to the pilot children who studied Document 20, that is at an average age of 11.04, Oakden and Sturt's sample scored an average 61.7%; Bradley's sample scored 45.5% at the same age. The Dudley pilot group approximates more closely to the latter sample; the score for Document 20 was 48% overall, 59% for Authenticity and 43% for Time. The Control schools' performance was far less skilful than any of the other groups, showing only 30% overall success, with 31% on Authenticity and 26% on Time.

There was an element of bad conscience in marking this particular test paper; so many children answered in good faith and were deceived. It was possibly wrong to have used the project director's familiar name in the rubric explaining the 'document': perhaps too much trust had been built up during the four years' work. Thus, it was an active relief when many children expostulated "you are tricking us Mr. West!" whilst many others recorded "Its a hoax". It was sad to see so many of the familiar traps sprung on the majority of children; 15% of the pilot group actually challenged the forgery in answering Question 2, but many more (41%), though accepting the best of the spurious 'facts' in answer to that question: (Its a letter about Julius Caesar"; "It was

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17. Inhelder and Piaget's "The Growth of Logical Thinking": Jerome S. Bruner, British Journal of Psychology. November 1959. page 363.

translated from Latin"; "It was found in a junk shop"), demolished the forgery in answering Question 4. For the others, the familiar reasons for authenticity proved inadequate - "because there really was a Julius Caesar"; "because he was murdered"; "because it gives the date and the names of real people"; "because Julius Caesar did invade England"; "this is in our History books". It is significant that the children's relative inability to detect a 'fake' offered in verbal context was greater than their earlier confidence in detecting the temporal absurdity of Picture No. 21 or the museum reconstruction of Pictures 12 and 13. Once again, this confirms the contention that children at the age of ten to eleven can work more confidently with objects and pictures then with text. The distribution of marks for all the documentary tests, with the basic data, group by group was as follows:

Fig.38 DISTRIBUTION, BY RANK ORDER, OF MARKS FOR ALL DOCUMENT TESTS. (Pilot Group Only)

Marks	No.	Boys	%	Girls	%	Average: C.A.	R.A.	V.R.
10	0	-		-		-	-	-
9	1	1	100	0	0	9.00	9.05	104
8	36	24	67	12	33	9.05	11.05	116
7	140	71	51	69	49	9.05	10.10	110
6	226	122	54	104	46	9.04	10.01	104
Average: 5.6.....								
5	138	72	52	66	48	9.04	9.04	99
4	72	45	63	27	37	9.04	8.08	92
3	35	18	51	17	49	9.01	7.09	90
2	8	6	75	2	25	9.03	5.10	81
1	3	3	100	0	0	9.06	4.09	76
0	0	-		-		-	-	-
	659	362	60	297	40			

TABLE XXV

These results are closely approximate to the previous years' distribution of marks for the picture tests. Here again, the positive correlation of test scores with age, reading ability and verbal skill is evident but the superiority of age and male sex is not as predominant as before. With these tests in the final year, only 41% of those above the average age scored above the average for authenticity and only 53% of those above the average age scored above the average for time. Except at the top two marks (80-90%), the girls' performance, at an average and above-average 60-70%, is now redressing the balance to some extent in the girls' favour. Only 36% of the boys scored more than the average for authenticity, whilst 53% scored above average for time questions; on the other hand, only 40% of the girls were above the average for Authenticity and 48% for Time questions.

It is important to note the main similarity, with internal fundamental differences, between the two groups' scores for contemporaneity (Figs. 38 and 39). In terms of "adequate time-sense", that is, the ability to date the document more or less satisfactorily, there is little difference between pilot and control groups' scores for most of the dated documents; indeed in the overall average there is only one point percent between them. In every case however, the pilot group's score is greater than the average for the control group, although for documents 4, 10, 11, 12, 14 and 15 their marks are within one or two percent of each other. In the cases of the other dated records, with our without contemporary status (documents 1, 2, 3 and 6), the pilot group's advantage rises from 6-14% above the control group's average, and for the seven undated documents the pilot group is almost consistently 10-19% ahead of the control schools.

The difference in the groups' ability to master the 'time' section of the documentary tests is more significantly demonstrated by the internal composition of those average

scores. In every case the pilot group scores more successfully on the contemporaneity of the document, leaving the control group to redress the balance only by adequate, if not strictly 'contemporary' dating. When scores for the half-acquired concept are taken into account the pilot group's advantage is substantial, an average superiority of 13% overall, which rises, in the cases of documents 8, 19 and 20 as high as 20-24%. The pilot group's ability is more convincingly demonstrated with several of the undated documents (Nos. 5, 13, 16 and 19) than with some of the dated items (Nos. 4, 10 and 15) and including the four 'objects-as-documents' (Nos. 9, 13, 17 and 19).

If we raise the criterion to accept as correctly contemporary only the complete 'triple score' for questions 6, 7 and 8, then, although the pilot groups' advantage is still +7% overall, it is much reduced for certain of the documents. The almost completely nil score for both groups with documents 1, 2 and 3 may have been due to some extent to the unfamiliarity of the new test; these items score well for the pilot group as a 'half-acquired' concept of contemporaneity.

Similarly all the undated documents, except the more familiar Bayeux Tapestry (No. 5), produced negligible contemporaneity scores for both groups. The essentially non-contemporary nature of the forgery (No. 20) defeated both groups on almost equal terms, though here again the pilot group had half understood the confusion of the period's date and the document's origin: the control group regained some advantage by scoring adequate dates for one or the other aspects of the letter.

An analysis of the contemporaneity skill, by periods and by comparison with the picture tests, is interesting. (See Fig. 37). The shape of each groups' graph is, similar one to the other, though with an overall superiority to the

Fig: 39

TABLE OF DISTRIBUTION OF SCORES FOR CONTEMPORANEITY OF DOCUMENTS (Percentage Scores)

TABLE XXVI

Document No.	Subject	Complete Contemporary Concept		Half Acquired Concept		Adequate Dating		Adequate Time Sense		Errors and Misunderstanding	
		Pilot	Control	Pilot	Control	Pilot	Control	Pilot	Control	Pilot	Control
1	Mr. Cobbett's visit	0	0	56	42	30	31	86	73	14	27
2	General Strike	0	0	61	48	27	32	88	80	12	20
3	Churchill's Escape	1	0	56	38	27	31	83	69	17	31
4	Apollo 16 Launch	45	43	23	18	20	25	88	86	12	14
5**	Bayeux Tapestry	35	19	20	18	27	32	82	69	18**	32
6	Punch cartoon	50	34	15	12	27	40	92	86	8	14
@7**	Bible story	8	1	32	37	31	19	71	57	@29**	43
@8**	Paleolithic tools	6	1	28	13	26	32	60	46	@40**	54
9**	Six Coins	13	6	41	37	18	19	72	62	28**	38
10	Armada pay scale	58	50	12	13	23	29	93	92	7	8
11	Confederate Army	69	58	8	6	18	30	95	94	5	6
12	Sale of Slaves	50	36	14	12	11	23	75	71	25	29
13**	Black Prince's Charter	15	5	12	7	5	10	32	21	68**	79
14	Declaration of Independence	61	46	11	9	21	39	93	94	7	6
15	Siege of Cawnpore	63	57	10	9	21	28	94	94	6	6
16**	Joan of Arc's letter	8	1	12	7	4	4	24	12	76**	88
17**	Hieroglyphics	38	26	11	12	17	19	66	57	34**	43

Fig: .39.
(Continued)

TABLE OF DISTRIBUTION OF SCORES FOR CONTEMPORANEITY OF DOCUMENTS (Percentage Scores)

Document No.	Subject	Complete Contemporary Concept		Half Acquired Concept		Adequate Dating		Adequate Time Sense		Errors and Misunderstanding	
		Pilot	Control	Pilot	Control	Pilot	Control	Pilot	Control	Pilot	Control
18**	Pepy's Diary	23	14	18	21	6	8	47	28	53	72
19**	Prehistoric tools	24	10	28	18	10	17	62	45	38	55
*20@	Forged letter	8	3	26	8	36	43	70	54	30@	46
	Averages	28	21	25	19	17	29	70	69	30	31

* Denotes non-contemporary documents

** Denotes an undated document

@ Denotes one incorrectly dated document

Fig: 40

TABLE OF DISTRIBUTION OF SCORES FOR CONTEMPORANEITY OF DOCUMENTS

Expansion of Data from Fig 39

TABLE XXVII

									PILOT GROUP					CONTROL GROUP				
Test	Doc.	Document: Subject and Source	Date Subj.	Date Doc.	Dated udtd.	Copy	P/S	Cont/ Non. Cont.	A	Ti.	Con.	Half Date	Tot.	A.	Ti.	Con	Half Date	Tot.
1	1	Sam Cook's Dudley Politican Union Poster.	1832	1832	Dated	Fac	P	Con.	46	71	0	56	52	36	58	0	42	41
1	2	General Strike Poster recruiting Special Constables	1926	1926	Dated	Fac	P	Con.	44	75	0	61	52	35	64	0	48	43
1	3	Churchill's Escape from the Boers (Pearson's Illustrated War News)	1899	1899	Dated	Fac	P	Con.	46	71	1	56	52	37	56	0	38	42
2	4	Apollo 16 Moon Mission (Daily Telegraph)	1972	1972	Dated	Fac	P	Con.	59	70	45	23	62	54	72*	43	18	58
2	5	Frame from the Bayeux Tapestry	1066	c1100	U/D	Fac	P	Con.	53	62	35	20	55	39	49	19	18	41
2	6	'Punch' Cartoon. New Army July	1916	1916	Dated	Fac	P	Con.	33	72	50	15	43	27	65	34	12	36
3	7	The Centurion's Servant, from Children's Bible	AD30	1930	U/D	Fac	P	N/C.	56	48	8	32	54	42	39	1	37	41
3	8	Illustrations of Paleolithic Hand Axes from Archaeological Journal	BC50 000	1950	U/D	Fac	S	N/C.	56	42	6	28	53	41	29	1	13	38
3	9	Rubbings of 6 coins from Q. Vic. to Eliz.II.	1890-1980	1890-1980	U/D	Fac	P	Con.	53	52	13	41	53	40	43	6	37	41
4	10	Scales of Pay for the English Navy	1588	1588	Dated	Trs.	P	Con.	48	79	58	12	55	32	75	50	13	43
4	11	Recruiting Poster for Confederate Army	1862	1862	Dated	Fac	P	Con.	46	85	69	8	55	29	77	58	6	40
4	12	Sale of 503 Slaves in Jamaica: Company records	1784	1784	Dated	Fac	P	Con.	42	69	50	14	49	27	60	36	12	35
4	13	Charter of the Black Prince	1348	1348	U/D	Pho	P	Con.	53	42	15	12	50	32	26	5	7	31

Fig: 40 (continued)

TABLE OF DISTRIBUTION OF SCORES FOR CONTEMPORANEITY OF DOCUMENTS
Expansion of Data from Fig 38

TABLE XXVII

									PILOT GROUP					CONTROL GROUP				
Test	Doc. No.	Document: Subject and Source	Date Subj.	Date Doc.	Dated Udtd.	Copy	P/S	Cont/ Non. Cont.	A	Ti.	Con.	Half Date	Tot.	A.	Ti.	Con	Half Date	Tot.
5	14	American Declaration of Independence	1776	1776	Dated	Fac	P	Con.	41	82	61	11	51	32	74	46	9	42
5	15	Letter from Siege of Cawnpore	1857	1857	Dated	Trs.	P	Con.	45	83	63	10	54	36	80	57	9	47*
5	16	Letter of Joan of Arc	1429	1429	U/D	Fac/ Trs.	P	Con.	47	37	8	12	44	34	27	1	7	32*
5	17	Egyptian Hieroglyphics	C400 0 BC	C400 0 BC	U/D	Pho	P	Con.	61	62	38	11	62	44	50	26	12	46
6	18	Pepys Diary of the Plague Year	1665	1665	U/D	Trs	P	Con.	60	52	23	18	52	35	45	14	21	37
6	19	Prehistoric Implements	BC 5 0000	BC 5 0000	U/D	Pho	P	Con.	59	56	24	28	52	33	43	10	18	35
6	20	Forged 'Letter from Julius Caesar'	BC55	1980	Dated	Trs	S	N/C.	59	43	8	26	48	31	26	3	8	30
						Overall Averages:			47	61	28	25	50	35	52	21	19	39

* Note apparent control superiority on Time section not corroborated by superior understanding of contemporaneity.

pilot schools. This advantage is not uniform from era to era however, nor from test to test. Most significantly of all it is less well marked between 'hard-core' or 'complete' contemporaneity scores and least divergent of all for the picture-tests. Dealing with pictures from the classical era to the present the two groups graphs almost coincide, indeed they are at equal points for medieval, nineteenth century and present-day pictures. The pilot group's main advantage in terms of 'contemporary' understanding lies in the most remote prehistoric periods. Both groups experience almost equal difficulty in completely understanding the contemporary nature of classical, Biblical, Greek and Roman sources: their performance with nineteenth century material is almost equally unsuccessful. Both groups experienced difficulty in making the fine distinction between 'classical' and 'medieval' in the first case, and between 'nineteenth century' and 'grandfather's generation' in the second. Both groups' results tend to peak from Renaissance to Enlightenment, with an earlier success with Ancient civilizations. The latter was largely due to the evident popularity of Pharaohs, Pyramids and hieroglyphics.

Evidently the same acquired skills were being marked by the tests; the inevitable superiority resulting from the pilot group's additional practice and special curriculum is less significant than the basic similarity of both group's results. We can conclude that, during the final year of the project, at their most mature chronological age to date, the pilot group's grasp of contemporaneity was improving steadily, equivalent to the control group's combined-contemporaneity scores and tracing a steadily ascending curve with their own 'half-acquired' concept. It is remarkable that in the course of the four years' work the latest graph of contemporaneity has reversed

the trend of the earliest graph of recognition - sequence combination. (See Fig. 12 on page 139. The pupils' ability to recognise, authenticate, sequence and date any evidence presented has in fact levelled up to a reasonably consistent plateau across the entire time-line by the age of eleven. This is convincingly demonstrated by the final composition of the overall group-scores for all tests taken throughout the four years. These are analysed in the following chapter.

CHAPTER SEVEN:

FINAL RESULTS OF ALL TESTS AND INDIVIDUAL DIFFERENCES

It is now possible to review the overall performance of the two groups of children who were involved in four years' work and to distinguish the many variable features in their attainments. These differences have already become apparent in successive Chapters by the ongoing analysis of the different groups of tests. The possible reasons for the many types of ariation can now be examined more closely.

These variations include: differences in the results of some of the original basic tests, (1) between the performance of an undifferentiated year-group sample in 1975 and that of the trained pilot group in 1980; differences between pilot and control groups' scoring on all tests set during the duration of the project; differences from school to school across those groups; variation on performance from test to test or from skill to skill; various levels of confidence in handling material from different historical periods; finally, and paramount, differences in the achievement and potential of individual children. These variations are examined successively throughout this Chapter, with a final endeavour to analyse very closely, in a random sample of 100 pilot school children, the relative influences of all the independent variables, such as innate ability, chronological age, sex, family background and motivation, the socio-

1. See Appendix I, pp. 382 - 405.

economic environment of neighbourhood and the educational influence of the school. All the test results, from 1976-1980, school by school and group to group are contained in the volume of Appendices, so that the analysis developed in this Chapter can be confirmed and further pursued.

First, we should examine the broad differences which emerged in the comparative results of the basic tests carried out on both the pilot group of the project and the undifferentiated year-group sample tested in 1975. We turn first to the Vocabulary test. (2) This was a set of thirty-six descriptions set as a word-completion test; in every case the first three letters of the required word were given, followed by the necessary number of spaces for the missing letters. The words ranged in difficulty from 'history' to 'genealogy', from 'modern' to 'dynasty'. The test had been set to 4,000 children aged eleven-plus in 1975 and was re-set to the pilot group of 675 children in the Summer term of 1980. The comparison of the results was as follows:

TABLE XXVIII (Fig : 41)

Children's Vocabulary at 10-11+ : Comparison of 1975 with 1980

Key:		
	++	Those words (5) where the pilot schools' performance in 1980 was 20% in advance of the 1975 sample.
	+	Those words (8) where the pilot children's performance was 10-20% higher.
	=	Those words (2) where the groups' performance were equal (+/- one to five marks).
	o	Those words (3) where the pilot group's performance was not as high as the sample in 1975.

2. See Appendix I, pp.383 -4.

(Fig.: 41)

TABLE XXVIII (Continued) : Comparison of children's vocabulary (Percentage scores)

	Word required:	Pilots: 1980	Sample : 1975
++	DOCUMENT	95	75
=	CENTURY	94	90
=	HISTORY	95	93
=	MODERN	91	88
+	MUSEUM	91	85
++	REIGN	90	65
++	JUBILEE	89	51
+	MEDIEVAL	87	76
=	JUNIOR	84	85
++	DECADE	82	31
=	ANTIQUE	82	77
=	SENIOR	81	81
=	PREHISTORIC	80	79
+	ANCIENT	80	73
=	GENERATION	78	76
=	RECORD	77	77
=	ANCESTORS	74	72
=	ANNIVERSARY	72	70
+	RECENT	72	55
=	TRADITIONAL	71	68
=	INHERIT	71	73
+	CHRONICLE	69	52

TABLE XXVIII (Continued): Comparison of children's vocabulary.

Word required:	Pilots: 1980.	Sample : 1975
= TEMPORARY	62	59
+ ARCHAEOLOGIST	58	52
+ EVIDENCE	55	42
+ ANNUAL	54	47
++ PERIODS	52	21
= HISTORIAN	47	49
= PRIMITIVE	34	35
o PERMANENT	29	36
= CENTENARY	23	24
= HERALDRY	20	19
o OBSOLETE	19	25
o SIMULTANEOUS	19	35
= DYNASTY	12	17
= GENEALOGY	3	7

From these results we see that the pilot group's vocabulary was substantially improved by their four years' special study; the average mark for the 1975 group of eleven-year-olds was 57%, that of the pilot group in 1980 was 64%. Thirteen specific words, more than one-third of the list, had been acquired by 6% to 20% more of the pilot sample. Some of these, such as 'document', 'medieval' and 'evidence' had been in constant use in the normal course of the project's syllabus.

Those words which gave the earlier groups a small advantage (from 1% to 11%) are unspecialized words from normal everyday vocabulary, such as 'inherit, primitive, simultaneous and obsolete'. The pilot schoolchildren had apparently acquired no special sense of 'history' or historian' from their study.

The results of the 'Long Ago' essay, written both in 1975 and in 1980, are particularly interesting. In 1975 the children's scripts had fallen into three main categories. The 'A' category included those which were exceptional scripts ranging widely across past time with reasonable accuracy and revealing extensive vocabulary and knowledge. The 'B' group included well-written scripts which confined themselves to a single historic period and the 'C' category comprised immature scripts, reasonably literate but ego-centric tales limited in extent of time. These divisions correspond roughly with Piaget's three main stages of formal, concrete and pre-operational development. The 1975 sample had included 4,003 scripts marked by the project director.

In 1980, 675 pilot schoolchildren also wrote the essay on 'Long Ago'; their scripts were marked by a team of Primary school teachers whose results were checked by an impartial group of Secondary School History specialists and an L.E.A. Adviser. The comparative results

were as follows:

	'A' Set	'B' set	'C' set
1975 sample :	15%	47%	38%
1980 sample :	6%	76%	18%

Although the 'A' category had reduced considerably- the Secondary school assessors relegated a large number of the Primary school teachers' 'A' category choices - the number of immature scripts were event more considerably reduced. There were 29% more pupils whose reaction to the unexplained title 'Long Ago' was an historical rather than an egocentric response. Samples of A,B and C scripts are included in Appendix V.

. The results of two picture-sequence tests, one from the Bayeux Tapestry, another illustrating stages in the growth of a town, (3) demonstrated no particular advantage to the pilot group. The earlier results had been extremely high; the Norman Conquest series had produced an overall average of 80% and the growth of the town series an 83% success rate. For the 1980 pilot schools, the results were similar, being only slightly higher (82%) for the Bayeux Tapestry sequence and almost equal (82%) for the series on town development. This appears to bear out the earlier conclusion (4) that, in terms of innate skill or general aptitude with sequencing, a relatively high potential exists in children of a given age, which is not much altered by practice or special curriculum.

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3. See Appendix I. pages 404 - 405.

4. Chapter One, pages 31 - 32.

Differences which emerged from the more specialized tests of the project, between pilot and control groups, were invariably to the pilot schools' overall advantage on average. This appears to indicate that the curriculum devised for the four-year duration of the project was beneficial. The pilot schools' average advantage for the seriation tests taken during the first two years of the project was +10% for recognition, +7% for sequencing and +9% for combined recognition-sequence. In the third year, with picture tests, the pilot groups advantage was + 11% for authentication, only + 4% for time-placing and thus + 9% overall. After an additional year's experience, in 1979-80, though with fewer pictures, the pilot group's advantage was again slightly reduced, to +9% for authentication, + 4% for time and thus, + 7% overall. This gives a final two-year average of + 8% for authentication, + 1% for time and + 5% overall.

In the single year's work on twenty documents, the pilot schools' average scores exceeded the controls' by + 8% for authentication, by + 9% for time and + 11% overall. The combination of all scores into one gross average for all the tests taken gives a final overall average of + 9% to the pilot schools. It appears therefore, that the project's curriculum tended to create an initial advantage, greater in terms of authenticity than in time sense, (which was sometimes negligible), but that the advantage was not progressive. The control group also made substantial progress with the different types of tests at their successive stages.

Within the two main groups school-to-school differences continually emerged in individual tests; these differences repeatedly transcended the main pilot-control division. Some control schools repeatedly achieved higher results than a few pilot schools, though, in the final analysis of all tests only three pilot schools, VV,YY and EF were consistently lower than the three best control schools (JY,MN and IJ). The final ranking order of all schools, combined in one pilot/control list, is as follows:

(Fig.42) TABLE XXIX RANK ORDER OF TEST RESULTS BY SCHOOLS

Rank.	School.	P/C	Total.	Nhd.	Sch.(5)	Description
1	NN	Pilot	53	6	7	Suburb/Housing estate
2=	DD	Pilot	52	2	6	Artisan/urban terraces/ flats
2=	OJ	Pilot	52	4	6	Old village/housing estate
4=	BB	Pilot	51	8	6	Suburb/affluent new houses
4=	AA	Pilot	51	10	7	Affluent suburb/middle class
4=	EE	Pilot	51	8	7	Suburb/estate
4=	SS	Pilot	51	10	7	Affluent suburb/middle class
8=	ST	Pilot	49	3	6	Council estate/village
8=	Pilot	Average	49	5	6	-Pilot average -
10=	OP	Pilot	48	4	7	Artisan/urban terraces
10=	RR	Pilot	48	3	6	Village/estate
10=	XX	Pilot	48	4	6	Artisan/urban terraces
10=	JY	Control	48	5	3	Artisan/urban terraces
14	MN	Control	47	7	7	Suburban estate
15=	VV	Pilot	44	4	5	Artisan/village

(continued)

(5) The criteria for the assessments of neighbourhood and school (marked 0-10), are described below from pages 301-302.

TABLE XXIX (Continued) RANK ORDER OF TESTS

15=	IJ	Control	44	3	6	Suburb/village
15=	YY	Pilot	44	4	4	Council estate
18=	EF	Pilot	42	3	4	Inner town/re-housing
18=	KL	Control	42	10	8	Suburban estate
18=	HY	Control	42	5	7	Suburban estate
18=	JJ	Control	42	10	9	Suburb/stable middle class
22=	IY	Control	41	6	7	Suburban estate
22=	QQ	Control	41	5	5	Artisan/urban village/estate
22=	CD	Control	41	7	6	Suburban estate/village
25	Control Average		40	6	6	-
26=	AZ	Control	38	5	4	Council estate/urban
26=	OV	Control	38	4	8	Suburb/village
26=	GY	Control	38	7	7	Suburban estate
29	PP	Control	36	3	5	Suburb/village
30	YZ	Control	32	4	3	Council estate

The relative influences of school and neighbourhood are evident here; they are examined more closely later in this Chapter (6) where a full account of the processes by which the assessments in the fifth and sixth column of the Table are explained.

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6. Pages 307 -8.

It appears from Table XXIX that the pilot project's advantage tends to dominate other complementary influences of neighbourhood and school. In four of the eight above-average pilot schools the school's rating is superior to its socio-economic neighbourhood. The other four above-average pilot schools are also rated high in potential; in three cases that advantage is confirmed by a high socio-economic rating.

The performance of the control schools is more erratic; their advantages are not as consistently exploited in response to the project's tests. Some, such as JJ, KL and GY, in spite of evident advantages in school and neighbourhood, are low on the list. It is significant that the two second-placed schools and, lower down the list, the third control school, (IJ at 15=) all overcome difficulties of neighbourhood by their higher rating as schools. School JY, first of the control schools, sharing its tenth place with three pilot schools is a complete anomaly.

The mixture of housing and families of all sorts around almost every school makes generalization dangerous. Nevertheless, it can be demonstrated fairly confidently that the working-class housing estates and the old industrial villages with their artisan terraces and high-rise flats can, given a good school with a positive, progressive curriculum and high motivation, produce results as good as and better than the more affluent suburbs, especially in those latter cases where the total commitment of the teachers and pupils to a given project is not assured. The most consistently influential variable of all was the pilot group's active participation in the project's curriculum.

At first sight, the least influential factor was the neighbourhood. The relatively low status of several of the pilot school's localities is due to the environment of Dudley and the types of school which volunteered for the project. There was a preponderance of hardworking schools in respectable, but not particularly affluent areas; 57% of the pilot children attended schools in 'below-average' neighbourhoods, only 43% of the sample were pupils in 'advantaged' suburban schools. In this respect the control schools evidently enjoyed more advantages than most of the pilot schools; the hardworking pilot schools EF and DD, accommodating 8% of the pilot sample, were considerably more deprived than any of the control schools. Overall, the difference in 'match' between the two groups was not great, nor could it be avoided and the majority of children in the pilot schools appear to have overcome the disadvantages of their neighbourhood without undue difficulty. Schools such as AA, NN and SS enjoy considerable social status in the Authority but an affluent suburban environment is not their sole advantage; as schools they are rated well above the average by the local inspectors and by other means of assessment described below (pages 296-304) School NN loses points only as a result of its large-scale internal mobility.

Schools DD, OJ and ST on the other hand, serve respectable, but relatively 'deprived' parts of council estates and artisan housing without detrimental effect upon the schools' performance. They are outstanding examples of schools mastering their neighbourhoods. These three schools, together with OP and XX which were not as fortunate in their final placing, were outstanding, throughout the project for their

dogged persistence, a high degree of pupil and teacher motivation and a determination to succeed. These were schools where, possibly, the most consistent teaching of the project was seen. There was, in the smaller schools an atmosphere reminiscent of earlier village schools; in fact parts of the communities served by ST and OJ could well be classed as fossilized 'village' neighbourhoods of the Black Country. There was, in the smaller schools, less pressure to conform with parental demands for progress-chasing, streaming, setting or rearranging of classes term-by-term, so that children did not repeatedly go 'up' or 'down' from class to class as the result of frequent testing. Extremes of large-sized year-groups were exceptional, though this extreme was certainly detrimental to the performance of children at school YY, who had experienced one mid-project change of schools and were organized in six-class year-groups taken from five different Primary schools. Similar problems of scale did not have the same effect on the performance of school NN, at first place, where other advantages were influential and there was no change of school during the project.

Stability was, in some cases, though not all, an important contributory factor to success. The most 'stable' schools, such as DD and ST, provided one class of children who remained together as a unit for the full four years and whose teachers were not changed during the course of a year; in some cases the teacher 'went up' a year with his or her class, providing an even longer duration of stability. The morale of these classes in smaller schools was high; they received the results of their tests with enthusiasm and regularly entered into

argument with each other and with their teacher, about the evidence in hand. School DD is the example of this type of class par excellence, also ST and, to some extent OJ. Table XXX indicates the extent of mobility and loss of pupils during the course of the project.

TABLE XXX (Fig.:43)

Numerical changes in pilot school classes, 1976-1980.

School	1976	1980	%Survival
x YY	76	76	100
* DD	34	34	100
* ST	36	32	89
OP	101	80	88
+ RR	42	37	88
* EF	33	29	88
+ BB	38	32	84
XX	71	57	83
* SS	39	32	82
* EE	36	28	78
NN	115	90	78
* VV	35	26	74
x AA	97	72	74
* OJ	29	21	72
TOTAL:	782	646	83

Key: * Single class engaged in project.
+ Group combined from parts of two classes
x Change of school in 1977 or 1978.

School XX demonstrates the unreliability of overall average results as the sole measure of success. In this case they conceal a higher than average teaching strength, motivation and effort. Several of the younger teachers involved were emotionally concerned for the success of their pupils, but the large size of the school caused some difficulties. More serious than regular replacement of committed staff was the wide range of ability amongst the pupils; this constantly perplexed the less experienced teachers. Yet, school XX produced a larger-than-average number of the most able children in the project.

This is demonstrated by the distribution list of those eleven children, (less than 2% of the pilot group), who scored a full average of 80% on the aggregate of all tests:-

TABLE XXXI (Fig. : 44)

Pupils achieving an overall average of 8/10 marks for all tests, 1976-1980

Sch.	Rank	Nhd.	Ass.	Sex	C.A.(1978)	VR.	OVERALL SCORES Auth.	Time.	Total
AA	4=	10	7	M	9.06	114	7	8	8
AA	4=	10	7	F	9.09	115	8	8	8
DD	2=	2	6	M	9.05	115	9	8	8
NN	1	6	7	M	9.05	111	8	8	8
OP	10=	4	7	M	10.02	126	8	8	8
OP	10=	4	7	M	9.08	132	8	8	8
OP	10=	4	7	M	10.01	111	7	8	8
RR	10=	3	6	M	9.06	120	8	8	8
ST	8=	3	6	M	8.10	124	8	8	8
XX	10=	4	6	M	9.10	116	8	8	8
XX	10=	4	6	M	9.06	114	8	7	8

Of twenty children in the random sample who scored an average of 7/10 for all tests, eleven were from similar 'down-town' schools, situated on council housing estates, old village areas, artisan terraces and inner-urban areas. School DD, a small old-fashioned building situated amongst mean streets and high-rise flats, had 7% of all children who attained above-average marks of 6,7 or 8 out of 10, though its actual proportion of the pilot group was only 4%. Similarly, school OP, more notable for hard work and sound teaching than for any other advantage, with 13% of the pilot sample, scored 16% of the marks gained at 7 and 8 out of 10. The same sort of above-average performance was achieved by schools OJ and ST. We find that in many of these low socio-economic areas there is a negative demand upon educational priority resources. (The exceptions are schools EF and DD). In other words, though not affluent, the 'below average' social areas were in fact supportive, respectable and independent. Also, a high proportion of the schools in such neighbourhoods were small, stable communities, one-form entry schools in the cases of OJ, VV, ST, EF and DD. The inter-relationship of neighbourhood and school will be examined more closely, with full reference to the random sample at the end of this Chapter (pages 296-314).

Throughout the four years of the project, totals and average marks for all tests were kept, school by school, for both pilot and control groups; this has made comparison between the two groups of schools possible at every stage, as the various tables and graphs have shown. As for individual children's results, every pilot pupil's mark was also registered in a central mark-book and individual

results were banked in the computer, year by year. Such close individual attention was not possible for the marking of the control group's tests, so that the performance of individuals and groups of pupils within schools can be offered only for the pilot set. The distribution of their scores, and the basic data for the average score group, for each of the three sets of tests, was as follows, (C.A., R.A. and V.R. as tested at mid-project in 1978):-

(Fig:45)

TABLE XXXII Results of all Pilot Group tests, 1976-1980

Distribution of marks, correlated with CA, RA and VR

Years 1-2: Seriation Tests			1976-78		
Marks	Pupils	%Sample.	C.R.	R.A.	V.R.
10	1)	0	9.05	13.01	115
9	2)	0	9.10	12.07	120
8	19)	3	9.06	11.08	114
7	88	13	9.06	10.10	110
6	141	21	9.04	10.06	110
5	184	27	9.04	9.11	103
Average mark = 5.0			Pupils average and above: 64%		
4	130	19	9.03	9.02	97
3	72	11	9.03	8.07	92
2	32	5	9.02	6.10	82
1	7	1	9.03	5.09	76
0	0	-	-	-	-
Averages: 5.0	676	-	9.04	9.06	101

TABLE XXXII (Continued) Results of all Pilot tests

Year 3: Picture Tests 1979

Marks	Pupils	%Sample	C.A.	R.A.	V.R.
10	0	0	-	-	-
9	1	0	8.10	12.07	124
8	38	6	9.06	11.04	113
7	193	30	9.05	10.09	110
6	234	37	9.04	9.08	101
Average mark = 6.1		Average and above : 73% (pupils)			
5	133	21	9.01	8.08	94
4	40	6	9.02	8.01	88
3	2	0	9.06	8.01	69
2	0	0	-	-	-
Averages: 6.1	641	-	9.04	9.06	101

Year 4: Document Tests 1980

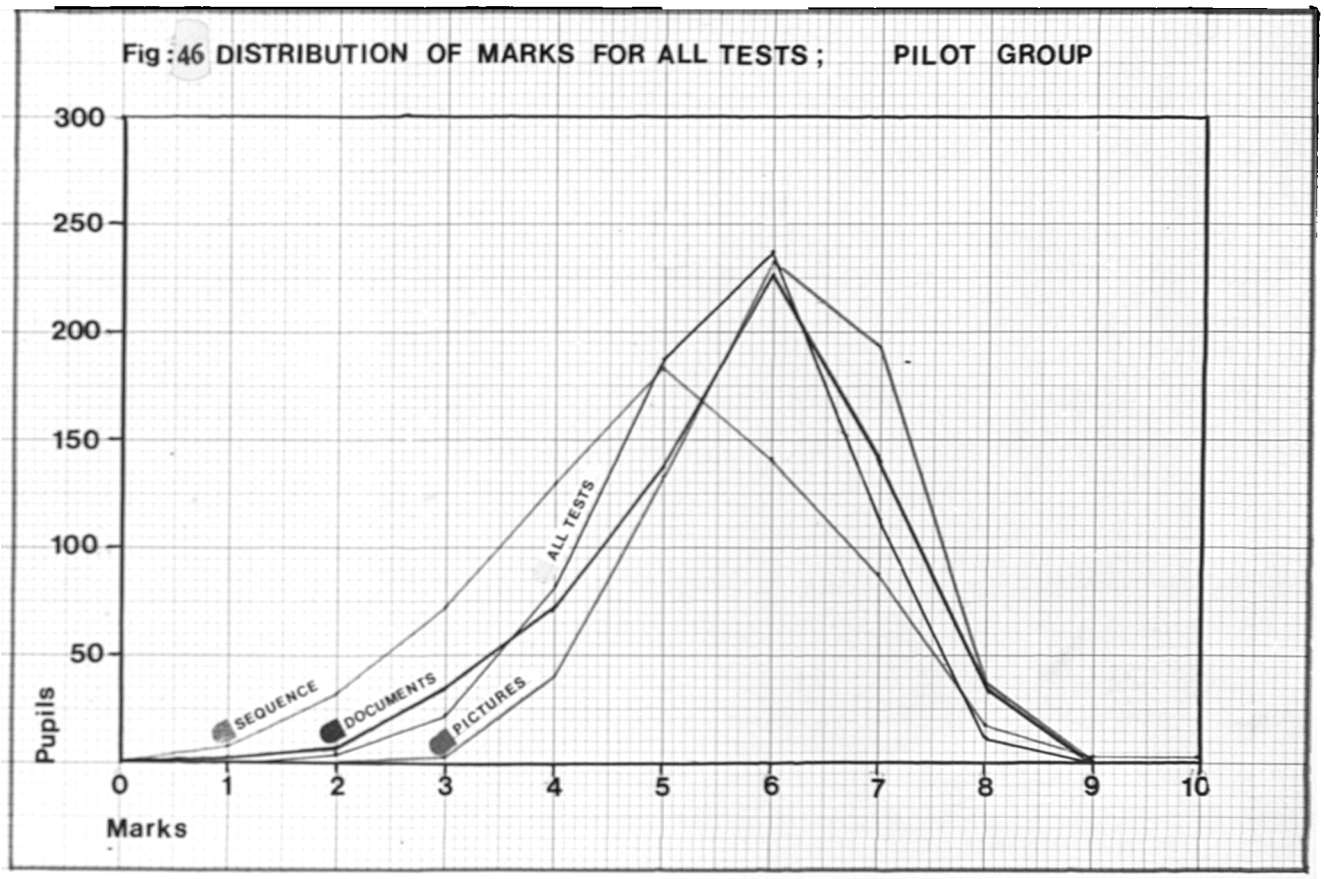
Marks	Pupils	%Sample	C.A.	R.A.	V.R.
10	0	0	-	-	-
9	1	0	9.00	9.05	104
8	36	6	9.06	11.05	116
7	140	21	9.05	10.10	110
6	226	34	9.04	10.01	104
Average mark = 5.6		Average and above: 61% (pupils)			
5	138	21	9.04	9.04	99
4	72	11	9.04	8.08	92
3	35	5	9.01	7.09	90
2	8	1	9.03	5.10	81
1	3	0	9.06	4.09	76
0	0	0	-	-	-
Averages 5.6	659	-	9.04	9.06	101

TABLE XXXII (Continued) Results of all Pilot tests

Years 1-4:	All Tests			1976-1980		
	Marks	Pupils	%Sample.	C.A.	R.A.	V.R.
	10	0	0	-	-	-
	9	0	0	-	-	-
	8	11	2	9.07	12.04	118
	7	112	17	9.05	11.01	113
	6	238	36	9.04	10.03	103
	Average mark = 5.5			Average and above : 55%		
	5	186	28	9.03	9.03	99
	4	82	12	9.03	8.05	89
	3	23	4	9.01	7.00	84
	2	5	1	9.05	4.02	71
Averages:	5.5	657	-	9.04	9.06	101

It is evident that the gradation of age, reading ability and verbal reasoning skills is in positive correlation with the scale of marks for all tests. The earliest scores, for sequencing, are distributed on the most normal curve (See Fig: 46) but the third year's work on coloured transparencies offered the best exploited opportunities for average children to demonstrate their ability; here the average score matches almost exactly the group's average ages, reading and verbal reasoning scores.

Fig :46 DISTRIBUTION OF MARKS FOR ALL TESTS ; PILOT GROUP



In the case of sequencing, the 184 children with average scores are of the average chronological age, but five months in advance of the average reading age and two points above the average verbal reasoning quotient.

The distribution of documentary tests scores is surprisingly high for so difficult a set of tests, though not as high a proportion of the children scored average marks and above; the average mark was higher for documents than for sequencing, but not as high as for the picture tests. For all the sets of tests the average chronological age was constant at the average level of achievement in each set; the reading ages at the average levels of performance however, varied from two to seven points above the whole group's average, being lowest for the picture tests and highest for the documents. The average verbal reasoning score at the average level of performance was exactly that of the whole group for picture tests and two to three pcints above the group average for sequencing and documents respectively. For all tests combined, the children with average marks were of average age, nine months ahead in their reading ages and five points above the average verbal reasoning quotient.

Reverting to the initial batch of basic verbal and arithmetical tests which were set early in the first year of the project, further correlations were possible by means of the computer. It will be recalled (7) that the basic tests set were:

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7. See Chapter Four, pages 126-128 and Appendix I.

a verbal test comprising problems of explaining 'earlier and later' (VT); a set of arithmetical problems (AT), set later as subtraction sums in a more familiar format (Sub); a simple place-order sorting exercise (PO) and a pictorial test of spatial relationships and perspective. (PTP). Table XXXIII shows average results of those tests achieved by each score-group on all tests combined:-
(Fig: 47)

TABLE XXXIII: Basic test scores correlated with scores for all project tests, in rank-order. (Marks /10)

	Basic data:			Earlier tests:			(1976)	
Scores:	CA.	RA.	VR.	VT.	AT.	Sub.	PO.	PTP.
8	9.07	12.04	118	9	6	9	9	8
7	9.05	11.01	113	9	7	9	9	8
6	9.04	10.03	106	8	6	8	9	7
Average = 5.5								
5	9.03	9.03	99	8	5	7	8	6
4	9.03	8.05	89	7	4	7	7	4
3	9.01	7.00	84	6	3	5	5	2
2	9.04	6.02	71	3	1	3	4	0
Averages:								
5.5	9.04	9.06	101	7.1	4.5	6.9	7.3	5.0

The most striking anomaly is the group's general failure with arithmetical problems, where numbers were associated with questions of age, date and duration. We see clearly

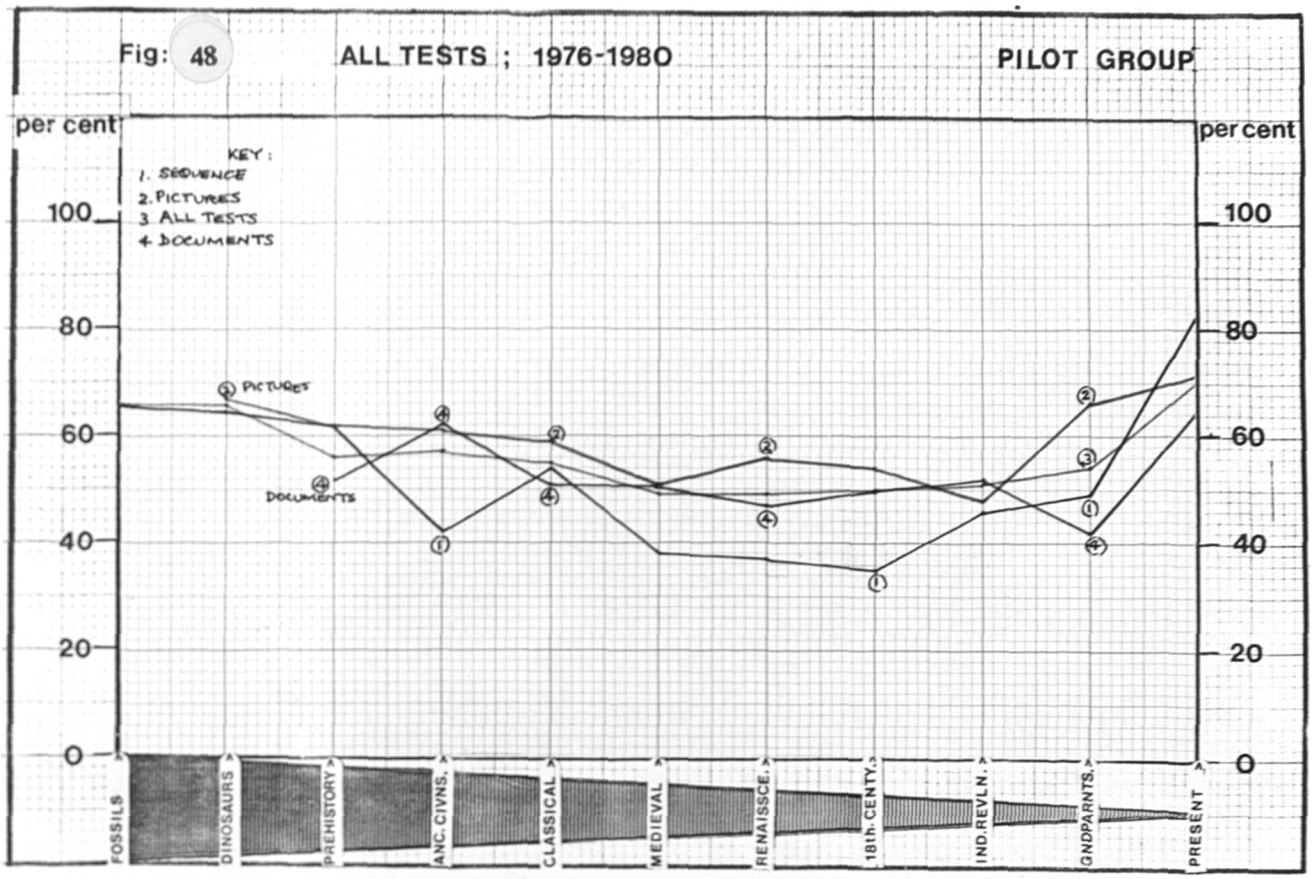
Fig: 48
ALL TESTS ; 1976-1980
PILOT GROUP
per cent
per cent
KEY :
1. SERVENCE
2. PICTURES
3. ALL TESTS
4. DOCUMENTS
100
80
60
40
20
0
PICTURES
DOCUMENTS
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

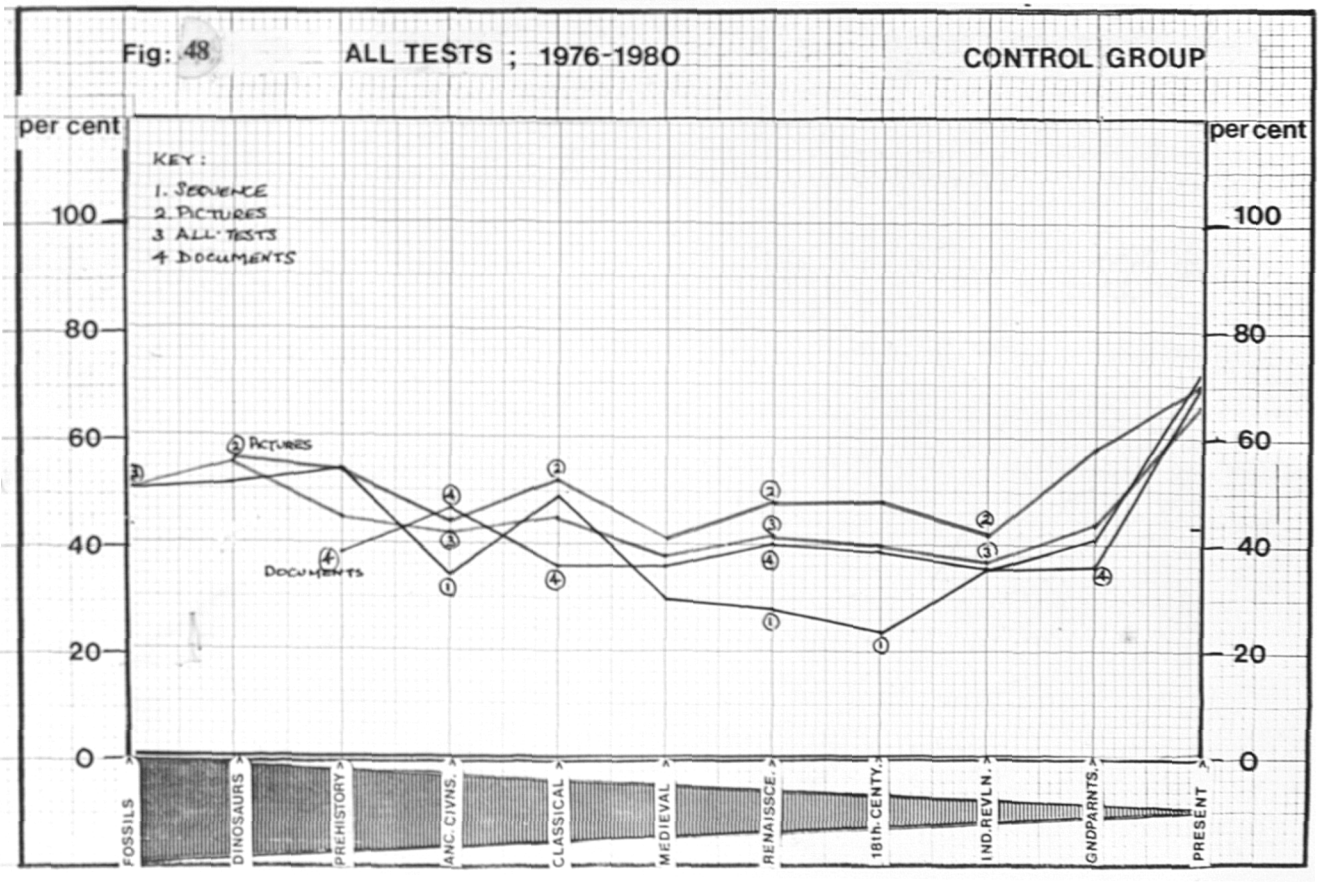
Fig: 48
ALL TESTS ; 1976-1980
CONTROL GROUP
per cent
per cent
KEY :
1. SERVENCE
2. PICTURES
3. ALL TESTS
4. DOCUMENTS
100
80
60
40
20
0
PICTURES
DOCUMENTS
FOSSILS
DINOSAURS
PREHISTORY
ANC. CIVNS.
CLASSICAL
MEDIEVAL
RENAISSCE.
18th. CENTY.
IND. REVLN.
GNDPARNTS.
PRESENT

the undeveloped nature of the children's 'mathematical time concept'. (8) The ability to calculate the 'sums' involved (Sub) was not lacking and their understanding of the relative sizes of different numbers (PO) was even stronger but their ability to reason verbally about time (VT) was superior to their understanding of verbal arithmetical problems. Those children who scored above-average marks were substantially superior in performance for every one of the basic tests. Only chronological age remained constant.

Next, we turn to differences in performance(Fig: 49) associated with different eras or periods of history. As we have seen from the successive graphs of test results (9) any difference between the control and pilot groups' ability to recognize and sequence items of evidence from different periods of time were only relative. The shape of each group's score-graph in every case conforms almost exactly one with the other; the tests were evidently measuring the same skill in both groups. The pilot group, it is true, demonstrates an overall superiority of up to 10% in most cases, but from period to period each group experiences identical difficulties and similar successes.

At seven years of age both groups fully appreciated the difference in span between very recent and very remote time. At the outset of the sequencing tests the roughly 33% sequencing average score by both control and pilot schools

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8. of I. Vikainen : On the Development of Time Concepts and Time Schemes University of Turku. (1961) Page 3.

9. Figs. 12,31 and 36.

Fig: 49 TABLE XXXIV TIME-DISTRIBUTION OF 130 ITEMS USED IN ALL TESTS, 1976-1980

	Distance in time from present	Sequence	Pictures	Documents	Total
1. Fossils (or earlier)	(6,000,000,000 years)	5	0	0	5
2. Dinosaurs	(2,000,000,000 years)	4	1	0	5
3. Prehistoric Man	(5,000,000years)	5	2	2	9
4. Ancient Civilization	(4,000years)	6	1	1	8
5. Classical era and Christ	(2,500 years)	13	5	2	20
6. Medieval Period	(1,000 years)	13	6	3	22
7. Discovery and Exploration/ "Renaissance" period	(500 years)	6	3	2	11
8. Eighteenth Century "Enlightenment" period	(250 years)	4	3	2	9
9. Industrial Revolution; (Nineteenth Century)	(150 years)	7	1	3	11
10. Grandparents/Great grand-parents generation	(80 years)	10	6	4	20
11. Present Generation	(30 years)	7	2	1	10
	Totals:	80	30	20	130

FIG : 50 TABLE XXXV AVERAGE MARKS FOR ALL ITEMS ARRANGED BY TIME-DIVISIONS

1. FOSSILS (5 items : 6,000,000,000 years)

	PILOTS			CONTROLS		
	Rec.	Seq.	Total	Rec.	Seq.	Total
SEQUENCES :	74	58	66	67	34	50
TOTALS	73	58	66	67	34	50

5 ITEMS INCLUDED;

Creation : Trilobite :Ammonite (2):Sea Urchin

2. DINOSAURS (5 items : 200,000,000 years)

SEQUENCES :	80	45	65	79	22	51
PICTURES :	63	74	67	48	70	56
TOTALS	69	62	66	59	50	55

5 ITEMS INCLUDED;

Tyrannosaurus Rex (2);Pterodactyl; Stegosaurus, Dinosaur

3. PREHISTORIC MAN (9 items : 500,000 years)

SEQUENCES :	70	55	62	61	46	54
PICTURES :	74	46	62	64	39	54
DOCUMENTS :	53	50	52	37	43	38
TOTALS	59	49	56	46	42	45

9 ITEMS INCLUDED;

Iron age groups (2) mesolithic flints; hand axes (2); cave paintings (2); Stonehenge; archeological report

4. ANCIENT CIVILIZATION (8 items : 4,000 years)

SEQUENCES :	42	42	42	32	35	34
PICTURES :	67	52	61	50	34	44
DOCUMENTS :	61	62	61	44	50	46
TOTALS :	59	53	57	43	41	42

8 ITEMS INCLUDED;

Tutankhamum (2); Pyramids (2) Assyrian Warriors; Persian battle; Egyptian tomb; Hieroglyphics

TABLE XXXV (Continued)

5. CLASSICAL ERA/CHRIST (20 items; 2,500 years)

	Pilots			Controls		
	Rec.	Seq.	Total	Rec.	Seq.	Total
Sequences :	65	42	54	62	36	49
Pictures :	66	49	59	57	45	52
Documents :	53	55	51	37	33	36
Totals :	60	49	55	49	40	45

20 Items included

Roman Soldier; Roman consul; Roman Standard-bearer; Parthenon; Greek mosaic; Trojan horse; Alexander the Great; Greek jewellery; Jesus Christ; (2) Nativity and Adoration (2); Light of the World; Crucifixion (3); The Last Supper; Julius Caesar's Letter; The Centurian Servant.

6. MEDIEVAL PERIOD (22 ITEMS : 1,00 YEARS) approx.

Sequences :	52	24	38	38	21	30
Pictures :	55	46	51	42	41	41
Documents :	51	48	51	35	42	36
Totals :	53	42	49	38	37	38

22 Items included

Viking ship; viking warrior; Bayeux tapestry (6); Knight (2); medieval king; Peasants with plough; Cathedral; Monk; Joan of Arc (3); Robin Hood; Manuscript; Crecy; Charter; village scene.

7. EXPLORATION AND DISCOVERY: (11 items : 500 years)

Sequences :	41	29	37	33	24	28
Pictures :	65	44	56	54	39	48
Documents :	41	65	47	33	63	40
Totals :	48	49	49	40	45	42

11 Items included

17th Century house; Guy Fawkes; Group of Cavaliers; Laughing Cavalier; Henry VIII (2); Elizabeth I; Sea battle; Fire of London; Armada wages; Pepys Diary.

8. EIGHTEENTH CENTURY 'ENLIGHTENMENT' (9 items: 250 years)

Sequences :	39	30	35	23	24	24
Pictures :	58	48	54	50	45	48
Documents :	42	76	50	30	67	39
Totals :	46	57	50	35	51	40

9 Items included

Frigate; Nelson; Coach; Grenadier; Slave-sales; Declaration of Independence; Hogarth's 'Children'; Blenheim; H.M.S. Victory.

TABLE XXXV (Continued)

9. INDUSTRIAL REVOLUTION (11 items : 150 years)

	Pilots			Controls		
	Rec.	Seq.	Total	Rec.	Seq.	Total
Sequences :	54	36	46	44	28	36
Pictures :	59	31	48	50	30	42
Documents :	41	73	52	31	51	36
Totals :	44	60	51	34	43	37

11 Items included

The 'Rocket'; Antique Telephone; Red Indian; Early Photography; Queen Victoria Beam Engine; Hussar; Coach; Radical Poster; Confederate Army poster; Cawnpore letter

10. GRANDPARENTS/GREAT-GRANDPARENTS (20 items : 80 years)

Sequences :	46	47	49	39	42	41
Pictures :	66	67	66	55	63	58
Documents :	36	61	42	31	52	36
Totals :	50	62	54	39	55	44

20 Items included

Churchill and Boar War; Kitchener; Edward VII; Edwardian station; Orville Wright; Edwardian Street; Victorian Wedding; World War I Soldier; World War I tank; 'Punch' cartoon 1916; German Infantry General Strike; Jarrow Crusade; Hitler; Churchill; Blenheim bomber; D. Day landings Steam locomotive; American V Japanese; Set of coins.

11. PRESENT GENERATION (10 items : 30 years)

Sequences :	83	80	82	73	71	72
Pictures :	72	70	71	69	72	70
Documents :	61	72	64	54	70	58
Totals :	68	74	70	62	71	66

10 Items included

Queen Elizabeth II (2); Racing Car; Astronaut (2); Television set; Vietnam; Apollo 16, Skateboard; Concorde.

reflected an already existing ability to place first and last items with a third choice accurately placed between them. The pilot group's ability to recognize and sequence items from the first three 'steps' of the sequence (10), from fossils to dinosaurs, to primitive man, increased steadily with practice; ancient civilizations were a continuing problem for both groups. During the first year of the project the 'trough' between ancient and modern was persistent and both groups climbed out of it only in the last two generations. The children's ability to deal with three recent items closely spaced was not as well-developed as their ability to deal with the three earliest items. Their concept of aeons of time was more strongly in evidence than their understanding of centuries and generations. Using picture transparencies, the pilot group began to level up the low spots between prehistoric man and the eighteenth century, with marked success in ancient civilizations. Both groups however continued to experience similar difficulty with their appreciation of the nineteenth century. Generally, the authenticity line of each graph was not subject to the same sort of fluctuation.

With documentary tests, some being clearly dated records, the position of recognition and sequence was reversed. Both groups achieved outstanding success with ancient civilizations but this was the result of a single illegible document, the unusually popular hieroglyphics.

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10. Fig: 13. page 136.

A deep trough developed with classical and medieval documents and the control group experienced a peculiar difficulty in appreciating the contemporary nature of documents from only two or three generations ago. The documents' graph naturally tends to reverse itself in comparison with the graphs for pictures and sequence in that the 'trough' becomes a 'hump' recording less success at earliest and latest but climbing more confidently from the medieval period to the eighteenth century. Both groups' curves were similar from the Middle Ages to the Renaissance, but the control group tended to lose ground between the eighteenth century and grandfather's day.

The summary of all results (Fig: 48), using totals which combine authenticity and sequence in one average result, produces two very level sets of graphs with an overall average of 43% for the control group and 54% for the pilots. The dish-shaped profile is still evident between higher points at each end of the time-scale, but the dish, by eleven years of age, is a shallow one. This indicates that both groups of children demonstrated a convincing grasp of time-sehemes which developed steadily throughout the four years of their Primary school life. The pilot group gained a special advantage from their extra attention to evidence and chronology. The number and distribution of the 130 items of evidence used in all the tests, arranged in chronological order is shown in Fig: 49. The average marks for each set of items is given in Fig : 50.

An unusual opportunity to compare the balance of relative skill in authentication and time-placing was

provided by the computer programme. This included a sorting of all individual pilot scores, test by test, into four main zones, sub-divided into eleven sub-categories or areas. (See Fig: 52). As the diagram shows, the computer was asked to relate all scores above and below 50% for authenticity in all tests with all scores above and below 50% for time-placing. Thus, those placed in Zone I are children who scored less than 50% for both skills and Zone IV are those who scored above 50% in both. Those in Zone II scored more for sequencing than for authenticity and those in Zone III were superior in authenticity. The Zones were divided into sub-categories by drawing three lines : the diagonal 1:1 and the divisions 2:1 and 1:2. These divided those pupils whose time-marks were more than twice their authenticity-marks from those whose verbal ability was more than twice their time-sense. The 'searchlight beam' of the diagonals includes the total distribution of skills, with a gifted minority in Areas 10 and 11. The computer printed-out the following balance of skills:-

(Fig. : 51)

TABLE XXXVI — Ratio of Authenticity: Time skills in all tests (Percentage of pupils:Pilot group only)

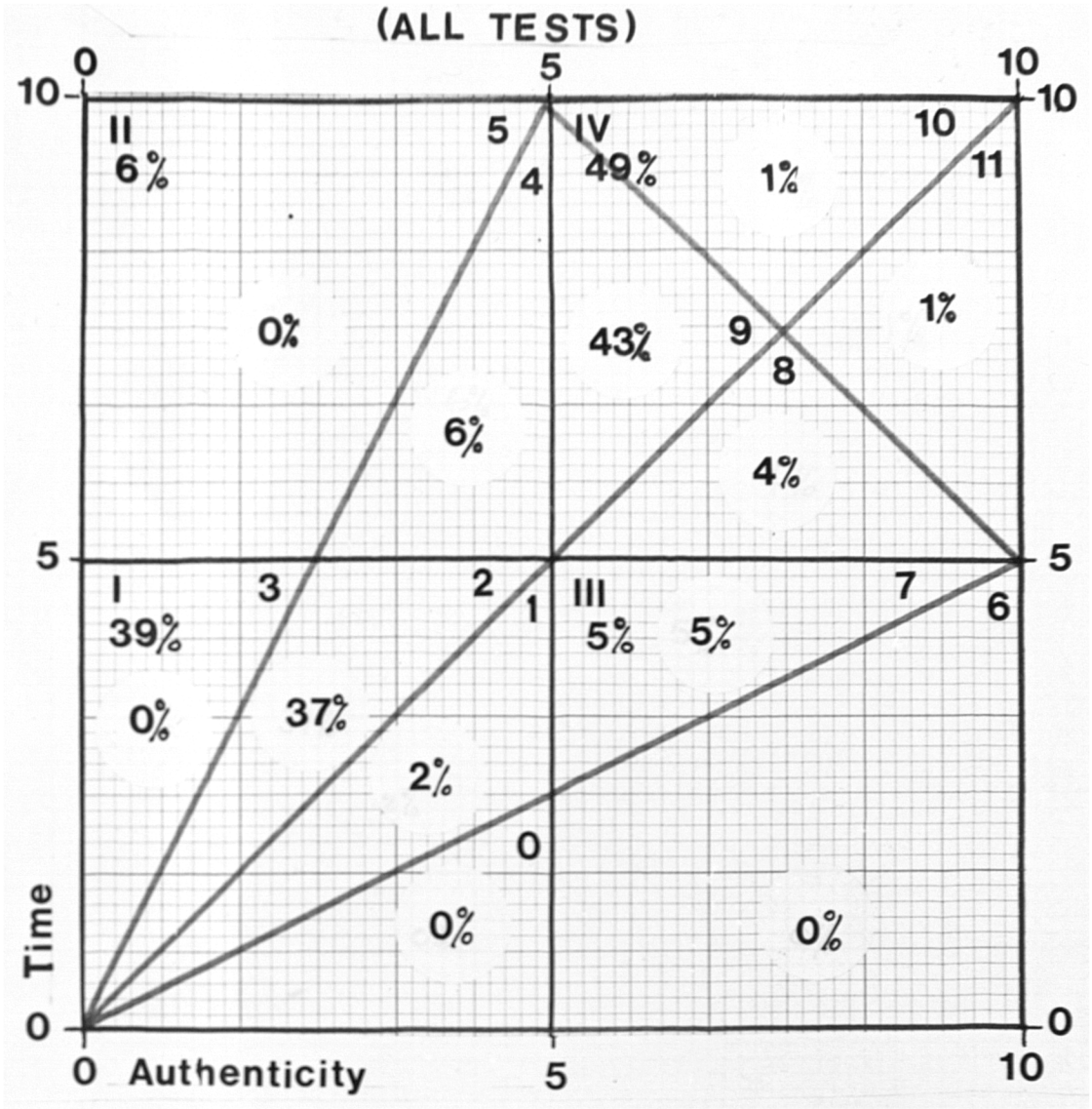
	SEQ.	PICS	DOCS	ALL
ZONE I: LOW ABILITY: SOME TIME SENSE	38	16	23	39
Area 0: Area of Disability	0	0	0	0
Area 1: Area of Low Ability	21	5	2	2
Area 2: Unusual sequence/Time sense	15	11	20	37
Area 3: Exceptional sequence/time sense	2	0	1	0
ZONE II : MODERATE ABILITY	2	2	39	6
Area 4: Special sequence/Time sense	2	2	37	6
Area 5: Exceptional sequence/Time sense	0	0	2	0

TABLE XXXXVI.(Continued)

	Ratio of Authenticity : Time			
	SEQ.	PICS	DOCS	ALL
ZONE III : HIGH LEVEL OF VERBAL SKILLS	40	24	1	5
Area 6: High level of verbal ability	5	0	0	0
Area 7: Exceptional verbal skill	35	24	1	5
ZONE IV: ZONE OF EXCELLENCE	20	58	37	49
Area 8: High level of verbal skills	10	27	1	4
Area 9: High general level of ability	5	19	26	43
Area 10: Gifted Area (Sequence/ Time)	2	3	10	1
Area 11: Gifted Area (Authenticity)	3	9	0	1

It is interesting to note that no children fall into the outer limits of Areas 0,3,5 or 6. It was reassuring to find that although schools had tested the full range of ability in every class, including the least able, no children were found to be totally disabled by the tests. (Area 0). There was no evidence of illiterate children with exceptional time-sense (Areas 3 and 5) nor any who were highly verbal but totally lacking in time sense (Area 6). The highly gifted set is very small, only 2% of the whole pilot population, that is 14 children of 65%; these are truly exceptional children, those who scored consistently throughout the four year battery at an average 80% success (see Fig: 44). To these should be added 4% in Area 8, giving a total 'gifted' population of 6% in all (that is, 39 pupils, approximately 2 in each class of 35, on average).

Fig: 52 RATIO OF AUTHENTICITY : TIME



KEY

ZONE I : ZONE OF LOW ABILITY 39%

AREA 0: AREA OF DISABILITY | AREA 1: AREA OF LOW ABILITY

AREA 2: UNUSUAL SEQ. SKILL AND TIME-SENSE | AREA 3: EXCEPTIONAL SEQ. SKILL AND TIME-SENSE

ZONE II : MODERATE ABILITY & TIME-SENSE 6%

AREA 4: SPECIAL SEQ. SKILL AND TIME-SENSE | AREA 5: EXCEPTIONAL SEQ SKILL AND TIME-SENSE

ZONE III: HIGH VERBAL SKILL 5%

AREA 6: HIGH LITERATE ABILITY | AREA 7: EXCEPTIONAL VERBAL SKILL

ZONE IV : ZONE OF EXCELLENCE 49%

AREA 8: EXCEPTIONAL VERBAL SKILL | AREA 9: HIGH GENERAL ABILITY

AREA 10: GIFTED AREA (SEQUENCE) SUPERIOR TIME-SENSE | AREA 11: GIFTED AREA (RECOGNITION) SUPERIOR AUTHENTICITY

These are the children whose reliable time sense equals, or exceeds a high degree of verbal ability and logical thinking about the authenticity of historical evidence.

It is noticeable that the main trend of pupils' abilities is set above the time-sense diagonal, 87% of the children demonstrate time-sense between 1:1 and 2:1, compared within authentication skills of 9% from the majority of the former (43%) balance time-placing with an equally high general ability and equal skill in authentication, but another 37% of superior time-sense is demonstrated in lower scores. This diagram gives the most constructive view of the analysis of the childrens' time-sense. There was a substantial build-up of the higher level of ability, revealed in area 9, from year to year, completed by the advantageous use of dated documentary material in the final set of tests. This, as we have seen (Fig : 36) completely overturned the previous superiority of authentication over time-sense. It should be remembered however that the computer print-outs of the mark register usually show a very narrow margin of superiority in individual cases, rarely more than 1 point out of 10 one way or the other. This is confirmed by the average totals shown in Fig : 36; most of the 43% of pupils whose scores are above the 1:1 diagonal favouring time-sense were in fact very close to that line.

The early competence of the children (Table XXXIII) at seven to eight years of age, in sequencing picturial stereotypes, was evident both in the low-scoring Zone I (38%) and well-balanced with high scores for recognition and

description in Zones III and IV (60%).
Pictures were the most successful medium for the children's uses of skill; their balance between authenticity and time-sense is high, with 58% in the uppermost Zone. The benefit of dated documents spreads the ratio of time-sense broadly acorss Zones I, II and IV, but the authentication of the document is not as well balanced in the moderate Zone III as it was for pictures and sequencing.

Thus, by means of the computer's analysis of the ratio of skills involved, we see the individual children's overall performance revealing more time-sense (thoughoften demonstrated in low-scoring areas), with a less preponderant authenticity skill than was indicated by school averages and scores arranged period by period. The balance of the individual children's total time-scores is in excess of 1:1 with authenticity, though never exceeding 2:1. It can be concluded from the computerised mark-book of all the pilot classes that these children had demonstrated a convincing sense of time.

It was intended to examine, as closely as possible, the independent variables which could have influenced individual children's performances. These were seen to be: the child's maturity and innate abilities; the supportive influence of the family; the possible influence of the neighbourhood of the child's home and the opportunities offered by each school. Each of these conditions could be broken down into more or less objective categories which identify socio-economic, personal, cultural and educational differences within each area.

In order to investigate the background of as many of the pilot schoolchildren as possible, a random sample of 100 pupils was taken from the total surviving population of 657 in June, 1980. The following tests and estimates were applied to each child in the random sample, by means of questionnaires to their schools and parents, and by some objective tests.

The children's reading ability had been measured in July, 1978, by means of J.C. Daniels and H. Diack's Standard Reading Test, No.12, (Graded Test of Reading Experience). (11) The random sample was tested again in June 1980 by means of Neale's Analysis of Reading Ability (12). Similarly, at mid-project the entire pilot population had been tested with the Non-Readers' Intelligence Test (13). The random sample only was re-tested in 1980 by means of the English Picture Vocabulary Test (14). The two scores were averaged for each 'random' child.

For this and all further tests and estimates a consistent method was adopted of relating all scores or assessments in every category to a ten-point ordinal scale. For ages, quotients and subjective estimates the span from highest to lowest was scaled, in each case, into one-tenth parts, so that each score, however disparate, would be related to a similar ordinal grading. Thus to indicate an above or below average chronological age, the youngest age recorded was subtracted from the age of the oldest; the resulting number of months was divided into tenth-parts and each child's age placed in the appropriate section, numbered

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11. J.C. Daniels and H. Diack; Standard Reading Test 12 Graded Test of Reading Experience. (Hart-Davis Educational, 1977)

12. M.Neale : Analysis of Reading Ability (Macmillan, 1980)

13. Non-Readers' Intelligence Test (Hodder and Stoughton, 1970).

14. English Picture Vocabulary Test. (Educational Evaluation Enterprises, 1968).

from 1 (at youngest) to 10 (at the oldest). The same method was applied to give an ordinal ten-point value across the range of reading ages, verbal reasoning quotients and other social data.

To gain an estimate of each child's personality a questionnaire asked Head-teachers and class-teachers to return their own view of each child's attitudes, interest, abilities and efforts. As to personality, the class teachers were asked to place each child on a five-point scale as follows:-

5 - a dominant leader

4 - an active group member

3 - an average child

2 - needs encouragement

1 - passive, easily led.

Next, the children's range of active interests, hobbies in-school activities and team membership was returned as:

5 - outstandingly active in many fields

4 - a good all-rounder

3 - normal average, with a hobby or interest

2 - sporadic interests, not maintained

1 - lacking interests, inactive

These two estimates were combined, out of ten marks per child, as PERS. in the computer coding (See Appendix V (3) Col.9)

Head-teachers were also asked to indicate the extent of each child's efforts and ability, each on a five-point scale, that is, for effort and motivation:-

5 - outstanding effort at all times

4 - hardworking, dogged determination

3 - normal, average effort, sometimes variable, but tries.

2 - sporadic effort, requiring supervision

1 - lacking effort, inert

(See Appendix V(3) Col.10)

and, as to ability:-

5 - outstanding ability in several subjects

4 - above average ability in one or more subjects

3 - normal average ability

2 - below average

1 - backward

(See Appendix V(3) Col.8: AB)

Attention was then paid to the family background of each pupil and the required information was sought from the school. Firstly, the socio-economic grouping of each parent's occupation, as indicated by job-status, was taken, by reference to the Registrar General's Classification of Occupations (Appendix V(3) Col.11 SEG) (15). Heads were asked to place each family's economic status on a subjective scale:-

5 - very well off, advantaged

4 - well provided for

3 - average family resources

2 - not well endowed

1 - deprived

For their cultural background, as far as this could be observed or deduced by class teachers, the classifications were:

5 - scholarly

4 - well-educated

3 - average

2 - literate

1 - illiterate (See Appendix V(3), Col.12CULT)

15. H.M.S.O. 1970

Suggestions were offered to assist teachers to apply similar criteria, (for example, 'owns his own books which he brings to school, belongs with his family to the local library, watches 'cultural' TV programmes, enjoys bookish hobbies, brings homework to school etc.)
A questionnaire was sent to each 'random' pupil's home (16), asking about the family's interests in history, family visits and any positive or negative comments on, or knowledge of, the child's participation in the project. Positive responses were counted and related to a ten-point scale. This indication of the family's likely support or motivation of the child in his historical interests in and out of school was recorded in the column headed SUPP. (Fig.: 58 Col.13).

The neighbourhood in which each child lived was assessed in two ways, firstly by reference to the Local Education Authority's official rating of all catchment areas for the assessment of Educational Priority. This index is based upon the number of free dinners issued by the school, the incidence of free clothing grants; the number of children in the care of welfare departments, probation officers and courts; the numbers of ethnic minorities, high family sizes; large numbers of one-parent families and a high incidence of children's physical defects, including speech, hearing, sight and reading retardation. This index was also equated with a ten-point ordinal value per child, 10 indicating no priority needs, 1 denoting widespread deprivation (Appendix V(3) Col.14 EP).

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16. A copy of this questionnaire is included in Appendix V.

This was matched with the Local Planning Department's provision of small-scale statistics, taken from the 1971 Census (17) which give the socio-economic status of each Ward of the Borough, which match the school's catchment areas very closely. (Appendix V(3) Col.15 SEG.)

Each school was then assessed by four different ratings. Firstly, the stability of each pilot class was graded, scoring negative points for a high incidence of mobility of children and teachers during the course of the project, for continual re-arrangement of classes or sets, or for transition from one type of school to another in mid-project. These factors were related to a ten-point scale and entered in the column STAB (Appendix V(3) Col.17).

The team of ten local Inspectors was invited to rate each school's educational potential in relation to its advantages and disadvantages; these ratings, on a ten-point scale, were averaged to give a single assessment. (Fig. Col.18, ASS). Next, each school's average reading score was taken from the LEA's annual screening of all pupils by means of Daniels and Diack's Standard Reading Tests. These reading quotients were related to a ten-point scale. (Fig: Col.19, LEA/RA). Finally, each school's average score from the computer print-out of all the project's test results was scaled and added as a separate gauge of the school's efficiency. (Appendix V(3) Col.20. PROJ).

In every case the results of all tests, indices and subjective judgements were scaled onto a ten-point division of their full span, in order to give a ten-point ordinal value to each assessment, and thus a comparable standard across the entire spectrum of different factors.

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17. Small Area Statistics (Ward Library, Dudley Metropolitan Borough) with reference to The Economic Problems of Inner Areas in the West Midlands County West Midlands County Council, (November, 1976).

A specimen page of the coded mark-sheets for the random group, which were offered to the computer is given in Appendix V (18). The 20 categories thus offered for each child in the random sample were:

A: IDENTITY					B: ABILITY				
1.	2.	3.	4.	5	6.	7.	8.	9.	10
No.	Code	Sch.	Sex	Age	RA	VR	AB	PERS	MOT

C : FAMILY			D: NEIGHBOURHOOD		
11.	12.	13.	14.	15.	16
SEG.	CULT.	SUPP.	EP.	SEG.	TOT.

E : SCHOOL			
17.	18.	19.	20.
STAB.	ASS.	LEA/RA	PROJ.AV.

The distribution of the scores for all project tests, aligned with the averages of each of the contributory factors' assessments, group by group, is shown in the following Table:-

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18. See Appendix V, page 527

Fig: 53. TABLE XXXVII RANDOM SAMPLE OF PILOT SCHOOL CHILDREN: CONTRIBUTORY FACTORS AND BACKGROUND
(Marks for all tests 1976 - 1980)

Mark	A: IDENTITY				B: ABILITIES						C.: FAMILY			D: NHOOD.			E: SCHOOL				
	Nos.	% Boys	% Girls	* Age	RA.	VR.	PERS	MOT.	AB	TOT.	SEG.		SUPP.	EP	SEG	TOT.	STAB.	ASS.	RA.	PROJ.	TOT.
8	4	100	0	7.3	7.8	7.8	8.3	7.5	7.5	7.8	7.0	7.6	7.3	8.0	1.0	4.5	8.3	7.5	5.0	5.5	6.7
7	20	55	45	5.8	7.0	6.4	7.4	7.2	7.3	7.4	6.2	5.1	5.7	7.1	3.0	5.5	7.4	7.0	5.8	7.8	7.0
6	34	62	38	5.7	6.2	5.6	6.4	6.4	6.5	6.5	6.0	4.9	5.5	7.3	3.2	5.2	7.5	7.0	5.7	5.8	6.5
Average	5.5																				
5	22	59	41	4.5	4.5	4.4	5.3	5.7	5.1	5.2	5.3	4.7	5.0	7.2	1.8	4.5	6.3	6.6	4.8	5.5	5.8
4	12	58	42	3.8	3.7	3.0	4.5	5.0	4.9	4.7	5.2	4.3	4.8	6.0	2.3	4.2	7.5	6.2	4.8	5.6	6.0
3	6	67	33	3.8	2.2	2.3	5.2	5.6	5.5	5.4	5.8	3.8	4.8	6.0	1.0	3.5	6.0	5.2	4.2	5.0	5.1
2	2	100	0	5.5	2.0	0	4.5	4.0	4.0	4.3	3.5	3.3	3.4	6.5	0.5	3.5	5.5	5.0	4.5	5.5	5.1
Total	100	62	38	5.0	5.4	4.9	6.1	6.1	6.2	6.2	5.8	4.4	5.1	7.0	2.5	5.0	7.1	6.7	5.3	6.0	6.2

* Chronological Age Ranges, Reading ages and all other entries on this table has been divided on a ten-point index.

The data was analysed and Spearman's coefficient of correlation was obtained for each pair of attributes (19). The choice of statistics to be calculated was complicated by the mixture of ordinal and interval data in the child's personal attributes and by the intention to relate all the independent variables to the single dependent variable of each child's mark on all project tests. Multiple regression was considered as being best suited to the different types of variable, but no suitable programme of such complexity was available. Pearson's product moment correlation coefficient would have been preferable in relation to some of the interval sources, but again the complexity of the different types of data dictated the more cautious use of the non-parametric Spearman coefficient.

The one nominal item, that of the children's sex, posed a separate problem; it was decided to divide the male and female populations, processing each group by a separate Spearman coefficient, followed by an independent t-test of significance. The question of the correlation of sex with project mark and other variables is thus considered last of all the various attributes.

The computer printed an overall correlation coefficient of each independent variable with the children's marks and also coupled each pair of independent variables internally, calculating the percentage of significance for each coefficient. The relative significance of the different factors which might be considered to have affected the children's

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19. S. Siegal : Non-parametric Statistics for the Behavioural Sciences (McGraw Hill, 1956) Page 202

performance on the specialized tests can be summarised as follows. Using, as a guide-line, the 5% significance level, many of the results are highly significant.

All the children's personal attributes were of the highest significance, at a level of 1% (Table XXXVIII) Highest of all were reading age and verbal reasoning with correlation of coefficient with project mark of .7331 and .6829 respectively. Personality, motivation and general level of ability were also highly significant, as was the family's cultural background (.4587) and their supportive attitude to the project and other special historical interests (.3648).

The correlation of mark with age was positive at .3416 (sig:.001) but this related only to the dependent variable of project mark and, at .2561 (sig:.006), with reading age. There was little, if any significance (ranging from .147 to .492) in the relationship of age with verbal reasoning, general ability, personality or motivation. Reading age and verbal reasoning are most positively related; reading age is not significantly correlated with the socio-economic status of the child's family, (.0934; sig:.178) but verbal reasoning and 'class' have positive correlation of .1829 (sg:.035). The personality of the child is closely related to his general level of ability at .7561 (sig:.001); his motivation at .7496 (sig:.001) and with the school's estimate of the family's cultural background at .4765 (sig:.001).

The child's personality appears to be least affected by the neighbourhood in which he lives, either in terms of its social status, at .1254 (sig:.107) or its rating for educational priority, a negative correlation at -.0607 (sig:.275). The total environmental influence is also negative, at -.335 (sig: .371). The same insignificant pattern applies to the relationship between neighbourhood and general ability as

as estimated by the schools : the least significant correlations are ability and neighbourhood rating, at .1191 (sig:.120). The inter-relationship of the child's six independent variables and mark can be tabulated as follows:-

(Fig: 54)

TABLE XXXVIII CORRELATION COEFFICIENT (CHILD)

CHILD'S:		AGE	RA.	VR.	AB.	PERS.	MOT.	MARK:
AGE:	co-eff:		.2561	.0703	-.0022	.0118	.1060	.3416
	sig:		. 006	. 0224	.492	. 454	. 147	. 001
RA:	co-eff:			.6895	.5500	.4655	.5080	.7331
	sig:			. 001	. 001	. 001	. 001	. 001
VR:	co-eff:				.5758	.5243	.5219	.4905
	sig:				. 001	. 001	. 001	. 001
AB:	co-eff:					.7561	.7192	.4905
	sig:					. 001	. 001	. 001
PERS:	co-eff:						.7496	.5119
	sig:						. 001	. 001
MOT:	co-eff:							.4297
	sig:							. 001

The inter-relationship of family influence with the children's own abilities is, as we have seen highly significant, but that significance apparently lies more in the school's estimate of the family cultural aspirations than in its socio-economic status, though these are also related.

The inter-relationship can best be shown as follows:

(Fig: 55)

TABLE XXXIX CORRELATION COEFFICIENT (FAMILY)

SEG : CULT = .4505 (.001)
SEG: SUPP = .1199 (.118)
CULT: SUPP = .2631 (.005)

CHILD'S / FAMILY'S		RA.	VR.	AB.	PERS.	MOT	MARK
SEG:	co-eff:	.0934	.1829	.1649	.1472	.0892	.1675
	sig:	. 178	.035	. 051	. 072	. 189	. 048
CULT:	co-eff:	.4550	.5346	.5056	.4765	.3631	.4587
	sig:	. 001	. 001	. 001	. 001	. 001	. 001
SUPP:	co-eff:	.1817	.2143	.2672	.2838	.1786	.3648
	sig:	. 036	. 008	. 004	. 003	. 038	. 001

Throughout the project, during in-service courses and teachers' workshop sessions, the most controversial trend appeared to be the apparently inescapable fact that, from the early stages of the project, and, to some extent towards the end, boys appeared to score more consistently high marks in the project tests than girls. This trend has been observed in relation to earlier test results described in previous Chapters. The separate Spearman coefficient for each group of pupils confirms the significance of these observations. In relation to reading age, the most highly significant of the children's personal attributes when correlated with project mark, there was, as we have seen a very positive 1% significance for all pupils' results combined. This significance is confirmed in the boys' coefficient of .7866 (sig: .001); it is not as great for the girls' sample. Though still highly significant at .001, the t-test reveals that the boys' test statistic, at 9.8678, where a value of 3.46 or higher was required, has a higher deviation than the girls' coefficient of 5.087 in excess of 3.6. Similarly, the boys' verbal reasoning scores were more closely correlated with their project marks than were the girls', their deviation being 7.473 over 3.46 as compared with 6.236 over 3.6. The deviation of observed test statistic is even more marked in relation to the coefficient of mark with, firstly, boys' and girls' generally assessed classroom ability and secondly, the assessment of their relative motivation towards the project. For the boys, both motivation and ability remain constantly high at .001; the significance of the girls' coefficient for motivation is still positive, but reduced to 4% and for general ability to 5%. There seems no further doubt that the

project tests were better suited to the personal attributes of the group of boys, though still suitable for girls. The curricular implications of this finding, with some conjecture as to the possible advantages enjoyed by the boys in following the project's curriculum and its tests are discussed more fully in Chapter Eight (20).

The influence of the school was secondary, though still well-marked. Most significant was the positive correlation of the school's ability to produce sound attainment of average reading levels in the L.E.A's annual screening tests with high average scores on the project's special tests. (.5052, sig: .001) and also with the dependent variable of each child's own mark. (.2560, sig: .006). The local Inspectors' assessments of the pilot schools' potential are evidently very much influenced by those features which tend to produce reliable reading results, a coefficient of .9148 (sig: .001) being the second most positive correlation of all the paired factors. Their assessments also relate very positively to the educational advantages of the schools' neighbourhoods (.9197, sig: .001) and their socio-economic status (.5351, sig: .001). A traditionally 'good' school, by external appearances, is usually found to be in a substantially 'good' neighbourhood.

The inspectors' views are also to a lesser extent, and negatively, influenced by the internal stability of the school, the correlation of these two factors being -.1988 (sig: .024). It might appear that, in the experienced L.E.A. view, the less 'stable' the school the better its performance!

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20. See Chapter Eight, pages 332 - 334.

This is explained by the fact that some of the Authority's 'star' schools of high reputation, more particularly the pilot schools SS, AA, NN and BB are either situated amongst mobile, aspiring populations, or, being large, tend to produce complex systems of setting and re-setting, require separate, autonomous Infant and Junior establishments with a disruptive transition at seven or eight and, by reputation tend to attract ambitious, mobile class-teachers. All these factors cause constant change and reorganisation in some large schools, without much apparent loss in the final performance of many of the average and above-average pupils.

These coefficients do not however reveal a few very significant exceptions where a small school, or a larger school in a poor neighbourhood, continually achieved reliable, and in individual cases exceptional results in the project tests, possibly by reason of their very stable, secure environments. Schools OP, ST, DD, and OJ are outstanding examples of such stable schools. These are Primary schools, where there is no administrative break or physical distance between First and Middle school departments. The smaller schools (DD, ST and OJ) were one-form entry pilot classes, where 27 to 30 children, - small classes by Dudley standards - entered the Primary school at five years of age and, with no division between their Infant and Junior phases, remained as one class with few, if any removals or new arrivals, sustaining the same friendship groups, occasionally sharing the same teacher in more than one school year and completed the four years of the project, as a class, virtually unchanged except by their shared experiences. These are, statistically, a

small sample of the project's whole population; they also faced other less favourable conditions, particularly in the difficulties of a wide range of mixed-ability teaching. Thus, their small but positive advantage of stability is not adequately revealed by the statistical test, though observable in the classrooms.

The exceptional feature of stability is adequately implied, more subjectively, in Lovell's terms: 'It is our opinion that the cultural milieu, climate of opinion, or the general experience to which the person is subjected, is of the greatest importance in developing thinking skills. It is in effect the Zeitgeist that appears to be of such great consequence. Part of the Zeitgeist is, of course, the atmosphere of the classroom, in the way the teacher poses and discusses problems; but not instruction as such'. (21) 'Atmosphere' is difficult to measure; it is not as susceptible to objective ordering as are reading scores or other evidence of 'instruction', nor even some inspectorial assessment based upon such measurements. It is nevertheless a factor to be reckoned with. Those schools which, albeit with individuals or small numbers of children, achieved exceptional results, are those which are seen to be the most stable, the most 'traditional' in the sense of the village school tradition. These are seen to be sympathetic to a mixed ability class of ordinary children, to their endeavours and their 'life-skills'.

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21. K. Lovell : A Follow-up Study of Inhelder and Piaget's 'The Growth of Logical Thinking'. British Journal of Psychology, 52. (1961) page 152.

It is perhaps, also significant that one factor used in the endeavour to measure stability was the continuity of a settled, experienced staff, who did not move from school to school during the course of the project. Apart from the obvious advantage to their classes, some children's positive results in the project may reflect a degree of those teachers' job-satisfaction and commitment to the project itself.

Of the random sample, of five pupils who consistently scored the top mark of 80% three came from the 'stable' type of school, two from OP and one from ST. Of the seventeen who scored an average of 70%, seven came from schools OP, ST or DD. These facts are not capable of more genuine statistical proof. These are the correlations of the school-factor coefficients:-

(Fig: 56)

TABLE XL — CORRELATION OF COEFFICIENT (SCHOOL)

SCHOOL		ASS.	RA.	PROJ.AV.	MARK:
STAB:	Co-eff:	-.1988	-.2819	-.0837	.1854
	sig:	. 024	. 003	- .204	. 033
ASS:	Co-eff :		.9184	.3935	.2315
	sig:		. 001	. 001	. 011
RA:	Co-eff:			.5052	.2560
	sig:			. 001	. 006
PROJ.AV.:	Co-eff:				.2990
	sig:				.011

The comparative results of individual schools, together with the averages of the various school-attributes are tabulated in Table XLI:-

Fig: 57
TABLE XLI

AVERAGE TEST RESULTS (ALL TESTS) BY COMPUTE RECORD : PILOT SCHOOLS ONLY

	(a) Data on School and Neighbourhood						(b) Basic Tests						(c) Project tests											
Code.	R.A.	INSP.	STAB.	NH.	TOT.	CA.	R.A.	V.R.	LCV.	LCA.	MPO.	MS.	PTR.	SEQ.			PICS.			DOCS.			TOTAL	
														R.**	S.	Tot.	A.	T.	Tot.	A.	T.	Tot.	A.	T. Tot.
AA*	8	9	5	10	7	9.04	10.03	105	8	6	9	8	7	6.	4.	5.	7.	6.	6.	6.	6.	6.	6.	6.
DD	3	4	10	2	6	9.04	9.03	96	8	5	7	6	5	6.	5.	5.	6.	6.	6.	7.	6.	6.	6.	6.
EE	6	9	8	8	7	9.03	10.01	107	8	6	9	7	6	6.	4.	5.	7.	6.	6.	5.	6.	5.	6.	6.
NN*	7	9	6	6	7	9.04	10.06	106	8	5	9	9	7	6.	4.	5.	7.	6.	6.	7.	6.	6.	6.	6.
OJ	5	5	8	4	6	9.03	8.11	96	6	4	8	7	5	5.	4.	4.	7.	6.	6.	7.	7.	6.	6.	6.
OP*	5	8	10	4	7	9.06	9.11	104	8	5	9	8	7	6.	4.	5.	7.	6.	6.	5.	6.	5.	6.	6.
SS	8	9	8	10	8	9.02	10.07	114	8	7	9	9	7	7.	5.	6.	7.	6.	6.	5.	7.	6.	6.	6.
ST	4	5	6	3	6	9.04	9.01	98	8	7	8	8	6	6.	4.	5.	7.	6.	6.	5.	6.	6.	6.	6.
BB	6	8	4	8	6	9.00	9.05	103	8	4	8	6	6	5.	4.	4.	6.	6.	6.	5.	7.	6.	5.	5.
EF	2	3	7	3	4	9.04	9.03	97	7	4	8	7	5	5.	4.	4.	6.	5.	6.	4.	5.	5.	5.	5.
ER	5	5	9	3	6	9.04	10.01	98	7	5	8	8	6	5.	4.	5.	7.	6.	6.	5.	7.	6.	6.	5.
VV	5	5	7	4	5	9.02	9.01	99	8	7	8	7	7	5.	5.	5.	6.	5.	6.	4.	6.	5.	5.	5.
XX*	5	5	7	4	6	9.05	10.00	101	8	7	8	9	6	6.	4.	5.	6.	6.	6.	5.	6.	6.	5.	5.
YY**	4	5	4	4	5	9.04	8.10	99	8	4	8	7	5	5.	5.	5.	6.	5.	5.	5.	6.	5.	5.	5.
Averages	5	6	7	5	6	9.04	9.06	101						5.	4.	5.	6.	5.	6.	5.	6.	5.	5.	5.

* Denotes two-form-centry, or larger, schools
** R = Recognition. A = Authority
S = Sequence T = Time
Tot. = Total.

In conclusion, we seem to see from the analysis of the many different factors which influenced the possible performance of the child in the school, that most of those factors were potentially significant and, usually interlocked. Of all the clusters of attributes which affected children's response to the project, as much or moreso than their attainments in reading or normal studies, most important of all were their individual, personal and innate ability, personality and motivation. Acting upon those personal attributes was the 'Zeitgeist' of the individual school, whether large or small, preferably competent in the basic skills of reading instruction but, more important, offering adequate security and encouragement to the mixed ability class with a high degree of motivation towards the oral and active responses demanded by the projects peer-group discussion and non-verbal tests. Less important to the child of average, or less than average ability in those favourable school circumstances were the additional benefits of a well-endowed family background, or an advantageous, affluent neighbourhood. The project, by its very nature, tended to promote a high degree of success in those schools, and amongst some children, whose incidence of recognized success in more traditionally accepted skills and attainments was not normally of the highest order. It was a project which set much store, and offered some rewards, to those who were highly motivated and who were prepared to make a fresh start in an unusual range of new activities.

The implications of the outcome of the Dudley project for the curriculum of any classroom are considered at length in the following Chapter. They are adequately

forecast by Lovell, who reflects that 'Teaching in the sense of instruction does not seem to affect the results as much as has been expected.' His own main conclusion is that: 'it seems that in teaching more needs to be done in the way of posing problems to children and in getting them to suggest possibilities and possible solutions. At junior school level, for example, it might be helpful to try to get children to arrive at conclusions by means of the inductive method'. (22)

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22. K. Lovell : op.cit. pages 151 and 153.

CHAPTER EIGHT:
CONCLUSIONS AND THEIR IMPLICATIONS FOR THE SCHOOLS' CURRICULUM

There was, in July 1980, a sense of satisfaction in the pilot schools about the viability of the project's aims, objectives and methods. Headteachers commented positively upon the advantages gained by pupils and several stated their firm intention to continue to develop the curriculum on which the project had been based and to use the available materials with successive groups of children. Six schools had already reintroduced the syllabus to younger classes following behind the pilot group. In a separate curriculum group in Gornal all three Middle (8 - 12) schools had undertaken to use the project materials and methods as part of their normal curriculum. These were introduced into every year of the schools at once, a formidable task, aided, wherever possible, by demonstration teaching and by the free issue of stories, slides and workbooks. A neighbouring Education Authority, Worcester-Herefordshire, had also decided to begin work on the project in some of its Primary schools.

One cannot avoid the conclusion that this degree of support was achieved in spite of the intensive battery of tests during the four years. Sixty-six tests in all took their toll of time and attention and must have regularly diverted the attention of class teachers and pupils from the more relaxed pursuit of a curriculum of historical evidence

as learning material rather than as test papers. It is evident that the Gornal group, as late entrants to the project, uncommitted to the test programme, had already given more attention to curricular details. The tests themselves, particularly those in the form of 30 narrative pictures and 20 documents, can be considered as a quasi-curriculum in their own right, but this is to make a virtue of necessity.

Any conclusions on the values and methods of the project have unavoidable implications for the curriculum of the Primary school. These appear to fall into line with some of the requirements and suggestions of the recently published guidelines of the Department of Education and Science, which require attention to skills and purposeful planning. The project must certainly be related to the general sense of unease which now prevails in English Primary schools, with particular reference to their uncertainty as to the most acceptable aims for Primary school "History" teaching.

The reverberations of the Primary School Survey of 1978 (1) still cause concern in Education Authorities, in schools and at in-service training courses and conferences. The Survey's criticism of some superficial 'discovery' and topic work, and its insistence on the requirements of curriculum planning merely confirm the misgivings of earlier local authority inspections (2); even though "less than one in twenty (schools) relied mainly on an exploratory approach" (3).

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1. Primary Education in England: A survey by H.M. Inspectors of Schools. Department of Education and Science. (London, H.M.S.O., September 1978).
2. See Chapter One, pp 12-17.
3. Primary Education in England. 3. 20. page 27

The survey cautiously observed, with some approval, schools which adopted "an appropriate combination of didactic and exploratory methods, varying their approach according to the nature of the task in hand and could not be said to incline to either approach" (4). This mixed economy of teaching accounted for about one-fifth of the classes observed by HMI.

More of the DES activity which followed the then Prime Minister's speech at Ruskin College in October 1976 was concerned with acceptable standards, with coherent statements of policy and intentions and with "guidelines" issued at local or national level in order to achieve a common level of attainment in certain agreed areas of curriculum. Mr. Callaghan had "suggested" that the increasing complexity of modern life meant that standards in many areas, including education, needed to go on rising. There was, he felt, a widespread feeling that this was not happening, and it would be to the advantage of all involved in education if these concerns were aired, ill-founded fears put at rest and shortcomings remedied" (5). The furore of the so-called Great Debate on education which ensued was mainly productive of DES publications. Circular 14/77 (6) and the subsequent Report (7) on its findings emphasised the statutory responsibility "of providing efficient and sufficient primary and secondary education to meet the needs of their areas firmly on education authorities.... This does not mean that authorities should seek a detailed control of school

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4. Ibid 3.20. p.27
5. Educating our Children: Four Subjects for debate. A background paper for the regional Conferences February and March 1977. Department of Education and Science HMSO. Page 1.
6. D.E.S. Circular 14/77.
7. Local Authority Arrangements for the School Curriculum Report on the Circular 14/77 review. Department of Education and Science (London H.M.S.O., 1979).

curricula in their areas; but it does impose on them a responsibility to formulate curricular policies and objectives which meet normal policies and objectives and command local assent" (8).

The Secretary of State considered that 'not all authorities have a clear view of the desirable structure of the school curriculum, especially its core elements. They believe they should seek to give a lead in the process of reaching a natural consensus on a desirable framework for the curriculum....." (9). The Primary school Survey was already under way at that time, having begun in the Autumn term of 1975, to be completed in the Spring Term of 1977: its findings were published in September 1978 (10). Criticisms were levelled at the superficiality of 'much of the work' in Geography, History and Science (11). For children at above average ability mathematical work 'was often too easy' (12). The extensive use of individual work card assignments "resulted in some children repeating known processes rather than being taken on to the next stage of their learning" (13). As to reading: "It was evident that teachers devoted considerable attention to ensuring that children mastered the basic techniques of reading but there was a tendency at all ages for children to receive insufficient encouragement to extend the range of their reading" (14). Basic skills "were seldom applied to work in historical geographical or even scientific topics...." (15) "accurate and careful measurement and observations were seldom a part of the work in science, craft or social studies" (16). "Few Primary schools visited in the course of this survey had effective programmes for the teaching of Science" (17).

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8. Ibid: paras. 5 and 6 page 3.
9. Ibid: para 13. page 6.
10. Op.cit: "Primary Education in England"
11. to 17. Primary Education in England. para 5.135 and 5.127 (page 75); para 5.64 (page 57); para 5.27 (page 47); para 5.3 (page 41); para 5.13 (page 43); para 5.66 (page 58).

History was no exception in being found wanting: "Taken as a whole in four out of five of all the classes which studied History the work was superficial" (18)...."a factor contributing to this situation was undoubtedly a lack of planning in the whole...." (19).

By January 1980 the Secretaries of State followed up their 'intention of seeking a natural framework in the school curriculum' with certain more definite 'proposals for consultation' (20). They reaffirmed the view that: "Each Education Authority should have a clear and known policy for the curriculum offered in its schools" (21) and that "schools are likely to be more effective in achieving their curricular aims if these aims are clearly set out in writing, are generally known and accepted by staff and pupils, and are systematically pursued through curriculum organisation and day to day teaching (22). Their 'framework' of certain key elements of the curriculum makes no specific reference to History, Geography or any form of 'Social Studies' or 'Humanities'.

The net result in educational conferences, at both local and national level, has been a growing unease about classroom guidelines, content and skills, the nature of the common core of the curriculum, its most essential elements and the degree of direction which schools will find acceptable. Some teachers express themselves fervently in need of such salvation: at national conferences there has been a demand for outlines of essential skills and desirable content. Unfortunately, in some cases, at LEA level, the outcome tends to be a rigidly

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18. Primary Education in England: para 5.127 (page 73); para 5.128 (page 73).
19. A Framework for the School Curriculum: Proposals for consultation by the Secretaries of State for Education and Science and for Wales. Department of Education and Science: Welsh Office (January 1980).
20. Ibid. para 4. page 2.
21. Ibid. para 7. page 2.

divided chronological history syllabus of the most traditional type. In some Primary schools the appreciation of necessary continuity with Secondary schools leads inexorably to endless debate on whether, or when, the Primary school should "do the Romans .... or the Tudors .... or modern times". "Skills" are seen to be a requirement but elusive.

Geography teachers are certainly in advance of their History colleagues. "Teachers are no longer encouraged to tell children about or get them to find out about particular places, but to introduce them to gain an understanding, at their own level, of the way places function and the methods geographers use to explain the processes involved. The emphasis has changed from the teacher building up in the child's mind a fund of geographical facts of 'knowledge' to the teacher developing the child's conceptual understanding and skill in explaining the geographical environment" (23). These aims are clearly borne out in a valuable published checklist of core concepts and their geographical interpretations under the main headings: Place, Activity and Time Concepts; Attitudes and Values and Enquiry and Presentation Skills (24).

Otherwise, there is no doubt but that, at school level, the word is out that "they" require a "swing of the pendulum" in a mass return to 'subjects' in Primary schools, to History and Geography which will replace with "skills" and "disciplines" the alleged 'superficiality' of projects, topics, thematic studies and an integrated curriculum. Such a reaction may not have been the intention of the Secretaries of State or HMI; such has been the effect of their ministration.

Yet at all steps of the debate and its official

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23. Foundations for Primary and Middle School Geography. Simon Catling Classroom Geographer, November 1978. page 1.
24. Ibid. pp. 5-8.

publications there have been loopholes through which a more liberal light could shine, a certain ambivalence of approach which almost certainly reflects committee authorship of surveys and reports. One is not surprised by the Survey's cautious approval of didactic teaching: "Teachers in a minority of classes employed a combination of didactic and exploratory approaches; in these classes the work children were given to do was better matched to their capabilities for the least, average and most able then in those classes using mainly didactic or mainly exploratory methods" (25). In racing circles this type of performance is known as 'hedging your bets'. But the approval of didactic methods is more open elsewhere: "In classes where a didactic approach was mainly used, better NFER scores were achieved for reading and mathematics than those using mainly exploratory approaches" (26). Perhaps the most indiscreet expression of prejudice in a generally tasteless document suggests that: "Limiting teaching to a form that relies on posing questions, or allowing children to pose questions, and then leaving them to ferret out the answers seems to be less effective than a more controlled form of teaching with explanations provided step by step" (27).

How then, does the average teacher learn to re-interpret other more thoughtful sections of this and other DES documents? For example that: "more could be done, particularly with the older children, to encourage them to follow a line or argument, to evaluate evidence and alternative points of view, or to reach judgments in the course of discussion and in their own writing"....."in only about one fifth of the classes were children encouraged to formulate and pose pertinent questions or helped to find

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25. Primary Education in England para 7.25 page 95.

26. Ibid: para 7.27 page 95.

27. Ibid: para 8.60 page 123.

alternative ways of expressing themselves clearly and accurately" (28). Similarly, in their own publication, H.M.I. accepted that: "If they are to extend their powers of language, children must be brought into contact with new experiences and ideas or look afresh at old experiences through discussion with teachers and through the use of books, rôle-playing and audio-visual material" (29). Even the truculent 'Framework for the School Curriculum' allows that: "few people would dissent from the proposition that schools should help pupils to use language effectively" (30).

How then, do we relate the aims and objectives of 'Children's Awareness of the Past' to the requirements of the D.E.S. and the uncertainty of the schools? The insistence throughout the D.E.S. papers upon the requirements of forethought and planning of work, upon rigorous study in adequate depth and upon an appropriate match between the abilities of children and the expectations of their teachers is incontrovertible. It is the vagueness of their references to unspecified skills, their apparent reaction in favour of more didactic teaching and more specialised subjects, particularly History and Geography, which has confused many non-specialist Primary school teachers.

Nor is preoccupation with validity of Primary school work in terms of continuity with the Secondary schools always seen to be relevant, "the planning of the curriculum and the preparation of schemes of work should take into account the requirements of the next stage of education as well as the effects of the previous age" (31). With reference to History this can be dangerous counsel, if, as is so often the case, Secondary school study becomes more superficial than

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28. Ibid. para 5.3 page 41 and para 5.24 page 47.
29. A View of the Curriculum. Department of Education and Science. HMI Series. Matters for Discussion II. (London H.M.S.O., 1980) page 7.
30. A Framework for the Curriculum: pp. 2-3.
31. Primary Education in England: para 4.11 page 27, 39.

the best of Primary school project work. The subsequent Secondary school survey and the HMI's working paper on Curriculum 11-16 make scant reference to History as such. "Frequently notes were dictated and too infrequently looked over to see if they were correct. The class has taken notes like these from the head of department for three months 'because they can't make notes for themselves'. The pupils could not always read them back and had no quick recollection of the earlier notes. A few random ticks were all the attention they received" (32). "An example was that of a history group in one comprehensive school described as 'non-readers' who were reading and copying such phrases as 'damnable heresy' from a worksheet..." "....much of the typical practice of schools fails to recognise how much learning depends crucially upon language, upon vocabulary (general and specialised) and structures which have been 'internalised' by the pupil experiencing them and also by discovering how to use them in his language, the common pattern of instruction restricts the pupils' opportunities of explaining and even more of using the language he needs"; "There were many examples of lengthy monologues without pause for questions, often accompanied by dutiful note-making by pupils" (33).

At its worst 'systematic consultation between teachers from the associated schools' may confine itself to lengthy discussion as to whether the Primary Schools need to 'do the Romans' before the children move into the Secondary school. One L.E.A.'s guidelines suggest Prehistoric man in Europe or Ancient Greece at eight years of age, followed by Europe at

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32. Aspects of Secondary Education in England: A survey by H.M. Inspectors of Schools. Department of Education and Science. (London H.M.S.O. December 1979) Chapter 6. para 3.11 pages 84-85.

33. Ibid: Chapter 6. para 2.9. page 75 and para 3.8. page 83.

the time of the crusades or South America and the Spanish Conquest 1500-1550 at nine, Stuart Britain at ten and Modern China, the Common Market or the study of the United Nations Organisation at eleven. References to necessary concepts and skills in such guidelines is usually sketchy and rudimentary: "Middle school children might be expected to have begun to have some appreciation of the following.... Have acquired an elementary vocabulary of time words and an idea of the concept of change and the motives behind what people have done" (34).

Conscientious Primary school Heads view such advice with commendable caution (35). They require to know exactly which concepts and skills are capable of development with Primary school children, which content and materials are best suited to convey and develop these ideas and which methodology they should best employ, more particularly in keeping children to study the vexed areas of the past. The Dudley project's findings throw some light upon this area of the curriculum.

Certain conclusions are admissible at the end of this study. Previous research was mainly negative in its conclusions, as we have seen, but failed to define children's 'sense of time' adequately. The Dudley project endeavoured to isolate more effectively some concepts and skills which teachers will be prepared to recognise as relevant and meaningful. These, the concepts of evidence, of authenticity and contemporaneity, together with the skills of recognition,

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34. Historical Association Conference (High Wycombe. October 1979). Circulated paper A8/00152/79 and A8/00157/59.

35. A more than usually systematic skills-based Middle school (8-12) History syllabus, prepared by the Headmaster of one of the Dudley projects control schools (QQ) is published as: History Teaching in One Middle School: G.S. Nunn. History Teaching Review. (The Journal of The Scottish Association of Teachers of History). April 1980, pages 7-11.

sequencing and seriation have been effectively tested. "Definitions cannot improve standards or guarantee quality, but greater clarity and agreement about aims and objectives can provide a better basis for evaluation and hence more effective action" (36).

The Dudley project, for the first time, recorded a longitudinal study of adequate duration with a significantly larger population of children and a longer, more substantial series of valid tests than those previously used. Thanks to the resources of a moderately large education authority and the generous, workmanlike response of thirty Primary and Middle schools, it was possible to carry out the exercise on a more significant scale from that available to previous researchers. More than 1300 children were regularly tested on four batteries of tests, numbering sixty-six individual papers in all, including a basic set of arithmetical, vocabulary and verbal reasoning scores, against the results of which the more specialised tests could be set, and matched with the results of an undifferentiated age-group of 4000 children.

It was, in some respects, unfortunate that so extensive a battery of testing, so regularly repeated, must have detracted in some measure from the more normal progress with, and enjoyment of, the prescribed curriculum and its special teaching materials. This was deemed to be a necessary risk to take if a more than adequate basis of tested ability was to be made available. It may nevertheless be true to assert that, more than was the case in previous studies, the Dudley project was devised and executed on a more scholastic basis, subjected to the regular scrutiny, approval and active participation of more than 200 practising, experienced school teachers, and achieved progress in classroom skills which was

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36. A View of the Curriculum: op.cit. page 5.

seen to be beneficial to the children taking part in the study.

The support of the Borough's computer division has made the processing of a large number of test results possible on a scale, and with potential correlation, hitherto impossible. In terms of scale along the Dudley project has extended our experience of primary school children's possible performance on a regular, week-by-week and term-to-term basis for the four years between the ages of seven and eleven, with 1300 normal children. Their work forms the basis of the following conclusions.

It can be confidently asserted that children at seven plus do have a latent sense of time, which can be demonstrated to develop consistently and gradually. There is no evidence of a stage of sudden acceleration between seven and eleven. If, as may sadly be the case, this potential ability appears to be deficient in face of later secondary schooling it can only be assumed that, in transition from the Primary school the children's "clocks have stopped". Their earlier ability is best demonstrated by seriation exercises and tests: duration is a later concept, as is also absolute time-placing. Contemporaneity is understood by some Primary school children but their sense of the possible authenticity of historical evidence is greater than their understanding of time. The results of the last year's tests on written documents begin to show a progressive improvement in the pilot group's understanding of the complexities of "contemporaneity" and demonstrate a significant superiority of their achievement over that of the control schools. This improvement appears to be more probably due to increasing maturation and experience than to the fact that many of the written documents were also dated.

Seriation tests appear to show that young children's sense of time 'long ago' is more highly developed than their appreciation of recent generations. Their ability to 'chunk' dinosaur-time and eras of ancient civilizations is more confident than their discrimination between recent centuries and generations. The latter development improves from ten to eleven-plus.

Children's skills in these areas depend most significantly on language skill: of all the main correlations of project test scores with other abilities, that with a high reading age and ability in verbal reasoning is most persistent. Children scoring eight out of ten for sequence tests had reading ages of two to four years above their chronological ages, on average: in the case of the picture-authenticity tests, the increment was two to three years but, in the case of document tests, strangely, only two years. Failure to associate number skills with time-sense, which Vikainen refers to as "a mathematical time-concept", also graphically illustrated in children's discussion by R.D. Hollands (37), is a considerable disability throughout the course of this development. Indeed, much casual educational comment upon young children's presumed failure to understand time would be more appropriately directed against their actual inability to use numbers in association with dates, ages and duration of time (38). Indeed it seems, in close observation of this pilot group's work, to be doubtful whether the average young primary school child understands at all what is to be quantified by a date or period. Even those, at the end of the test sequence, who were capable of producing well above-average results in terms of authenticity and contemporaneity were tempted to use

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37. A Discussion with Ten Preparatory School Boys Aged 7 Years: R.D. Hollands. Primary Mathematics Vol. 8 No. 2. 1970

38. "Mistakes made by schoolchildren when stating dates are often caused by miscalculation rather than incorrect conception of time". The Development of Time Concept and Time Scheme. Inkeri Vikainen. Report from the Institute of Education, University of Turku, 1961 page 3.

nonsensical numbers in assaying a date: thus prehistoric man, clearly understood to be vastly remote, could be estimated as millions or hundreds of years ago by otherwise able children. Similarly, the more subtle gradation of periods up to three hundred years ago was usually numerically unsound.

Teachers were loth to abandon number - yet little specific teaching of, for example, subtraction of dates to produce ages, was ever in evidence - on time-charts and in group discussion. Yet, there was no doubt but that many children who could understand and competently handle the sequential difference between fossil, dinosaur, primitive man and ancient civilization, were manifestly ignorant of their numerical distances in time from the present. It must be pointed out however that the children's disability in this field of experience applied only to their inability to ascribe dates and numbers to undated material. Their ability to appreciate and handle the implications of a dated item is normal, as the document tests particularly demonstrate. This area of the study demands more specific research.

The children's thinking on the more complex later tests at the ages of nine to eleven-plus conforms closely to the Piagetian schema; the children's real conceptual level and operational thinking was not fundamentally affected by the special curriculum of the project. The proportion of the group who demonstrated the ability to use formal operational thinking in the written exercise on 'Long Ago' and in reasoning about the authenticity of documents did not significantly exceed, after four years' practice, the 4% of those who were similarly able in previous tests of the undifferentiated year-group of the same age. A special curriculum appeared to intensify the development of skills, of seriation and the successful verbal attribution of authenticity to evidence. The same tests, compared with the undifferentiated year-group sample, revealed a considerable diminution of immature, pre-concrete lack of reasoning and a consequent enlargement of the concrete operational group at its appropriate age-level.

It is certain that ideas of authenticity, evidence and time correlate positively with powers of verbal reasoning, maturity of chronological age and, most particularly, with reading age. There is a minority whose skills, demonstrated by the specialized tests, have negative correlation with verbal reasoning and reading age. Over all four years' tests 22% of the children aged 7-11 who achieved above average marks of 60 to 80% had verbal reasoning scores below the average of 101, many well below this mark: similarly, of the same above-average set, 21% had reading ages from one to three years below the pilot group's average. These results are reflected in the individual tests: 18% and 20% of 60-100% test scores respectively were below average verbal reasoning and reading ability for the seriation tests. 41% and 37% had below average verbal and reading quotients for high achievement on the picture authenticity tests and, most surprisingly, those with above average scores on the very verbal document tests included 30% who were below average for verbal reasoning and 24% who had less than the average reading age. These discrepancies are undoubtedly attributable to a high level of motivation in certain pupils and schools but may also indicate specific reading and writing disability in otherwise responsive children. There is a gifted minority, of no more than 5-10%, whose formal operational reasoning power and understanding of complexities of authenticity and time at 7-11 set them well above the average level of achievement and potential of the rest of their age group. These are children with reading ages of 12 years 7 months to 13 years 1 month at nine, and with verbal reasoning quotients of 116 to 124 who are capable of scoring a consistent 80-100% mark on complex picture-authenticity and documentary tests. These pupils merit the special provision, within normal classroom practices, of additional curriculum especially suited to their needs and capabilities. Most especially for these children: "....more could be done, particularly with the older children, to encourage them to follow a line of argument, to evaluate

evidence and alternative points of view, or to reach judgments in the course of discussion, and in their own writing" (39).

There was a persistent discrepancy in the performance of girls as compared with the higher results achieved by the boys in the pilot sample. Of the 656 children who at an average age of 11 years and 4 months in July 1980 completed the full four-year course of study and tests, and whose total results had been stored on computer, 361 were boys and 295 were girls: this gave a numerical advantage of 10% to the boys. The marks of all tests combined however, were distributed disproportionately between the sexes: 60% of those children who gained marks above the overall average of 5.5 were boys and 40% were girls, an advantage of 20% to the boys. Only one of the eleven children who gained an average of 80% on all tests was a girl. At 20-30% the divergence is not evident; indeed of the five children who scored an average mark of 2 out of 10 for all tests, all were boys. Conversely, proportionally more girls scored below the average at 4 or 5 marks out of ten. 59% of boys scored above average marks for all authenticity tests and 61% for all time sections: comparable marks were scored by 49% and 48% of the girls respectively. An improvement in the girls' performance was beginning to be noted in the final year of the documentary tests.

This sexual discrepancy was not unexpected, having been noted by earlier researchers in this field (40), and was evident to the Hadow Committee in 1931: The evidence of teachers in mixed primary schools indicated that up to the age of eleven boys showed rather more independence of thought and greater facility in oral expression than girls. Girls at

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39. Primary Education in England. op.cit. para 5.3, page 41.
e.g. A Study of the Development of a Concept of Time in Young Children. Kathleen Henry. MA Thesis, Liverpool University, 1960. page:201
Concept of Historical Time in Junior Children. P.J. Congdon. MA Thesis. University of London 1968 page: 134. Conclusion - 16.

this age frequently exhibited greater facility in writing; they were capable of rather more sustained effort and often produced more painstaking work than boys" (41). The difference is familiar at seven years of age when boys are often dominant, but the girls' failure to do little more than redress the balance with the document tests at eleven was more unusual.

This failure could have been due to two major influences. Firstly, the teaching materials could be interpreted as sexist, illustrative of male chauvinism, if such distinction is now permitted by equalising legislation. If this is so, then the traditional view of History itself is male-orientated. Probably this view would not be seriously contested; certainly, the materials chosen for teaching, study and tests was traditional and European by choice. This was deliberate, as it was intended to endeavour to discern traditional influences and viewpoints: to have introduced totally alien materials from the third world culture or a feminist standpoint would have induced confusion and additional, variable and unknown factors. One was endeavouring to discover English children's view of a relatively familiar tradition of the past. To insist that the materials were predominantly suited to boys' interest, or that most boys' interests are predominantly militaristic, whilst most girls are predominantly concerned with babies and the home is a total acceptance of sexist attitudes which are, to say the least, debatable. Few teachers were concerned to press this distinction very seriously, whilst more pointed out how many of the picture-slides and tests were not exclusively male-orientated. Many were concerned with family life, children, female heroines, costume, jewellery, nurseries, shops, weddings and animals or birds, if these are indeed the primary interests confined to girlhood.

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41. Report of the Consultative Committee on the Primary School. Board of Education. London HMSO. 1931 page 53.

The mode of work, particularly the composition of groups and the emphasis upon verbal discussion, was possibly a more important influence favourable to boys, than was the choice of content of materials. The project possibly tended to prolong the early dominance of boys in mixed discussion groups and by the continuing use of multiple choice questions and a set format of question and answer reduced the increasing tendency of little girls to write more meticulously than their male peers. It would be helpful to continue this train of thought by further experiment with single-sex group work and an increased amount of written essay answering, in order to discover whether girls' work would then conform to the usual norms.

The wealth of experiences and interests revealed in the children's responses to letters of enquiry was a revelation. Children referred repeatedly to home activities and shared family interests: "My mom took me to a museum in May: I went to see some Philistines"; "My Dad went with my uncle to do some brass rubbings in a church in Telford"; "I have got a model of a steam engine at home and my dad has told me about it"; "I thought of it (James Watts' steam engine) because in the London Science Museum I have seen a model of it"; "I went on holiday to St. David's and my mom bought a brass like this one so I thought it was one"; "I knew the ship was the Victory because I have been to see it at Portsmouth when I was on holiday"; "When I went on holiday to the Isle of Wight I went to visit the ruins of a Roman Villa at Brading. This is where I got the idea from"; "My mother showed me how to do leaf rubbings and that gave me the idea (of brass rubbing)"; "I went about four years ago with my family on a trip. Nelson's ship is very low and it had three decks, the bottom deck is the Captain's deck"; "I got the word stegosaurus from a Dictionary of Dinosaurs at home and I collect stickers with pictures of dinosaurs on them and model dinosaurs" "My daddy tells me a lot about History. He

had told me about Nelson and the Battle of Trafalgar". "My grandad told me about the Fire of London last year and showed me a picture in a book" "I have some Waterloo soldiers at home both French and British and Prussian" (Teacher: John "Wargames" in the Napoleonic period using 20 mm Airfix plastic figures); "My nan has two pictures of the Laughing Cavalier, so I asked about him and she told me about him". "I thought of that answer because in October I went to Greece and saw the Acropolis and I learned a lot about it"; "When my mother cameback from Greece she bought some photographs of the Acropolis"; "I put the Acropolis because I have been to Greece and seen the Acropolis"; "We were on holiday in a bungalow and the picture was on the wall. I asked my Dad what it was and he told me"; "I knew it was the Flying Scotsman because my dad told me when I was playing with my train layout"; "We went on a trip to the Great Western Railway on my brother's birthday and it looked like a train we went on"; "I knew it was the Laughing Cavalier because I saw it in an Art Gallery"; "I noticed the painting when I went to Blenheim Palace in Oxford"; "Well, I collect small soldiers and I have made a battlefield for the Waterloo soldiers"; "The idea put in my head that the picture was a Napoleonic soldier was because of a friend's model soldiers". Perhaps the most unusual source of information, typical of the present day information explosion via unusual media was: "My dad works for a brewery and they sell a new lager called Cavalier. He has a tie with the Laughing Cavalier on it". A similar breadth of source material for the same picture was the child who had "seen it on BBC2 and in the Beano comic".

Many class projects and school visits had been equally memorable: "We had a lesson at school. Mr. H. was showing us slides"; "At school I did a topic on Henry V and saw one of Mrs. N's leaflets of Henry in armour and I drew a picture of him"; "It was because of a school visit to Stratford-on-

Avon as we are doing a project on Tudor times"; "Nearly everybody in the school knows about the Fire of London and how it started in Pudding Lane"; "Mrs. B. read us a story when we were in her class about the fire of London and we did some homework on it"; "Well, it was a school lesson and we had to do a picture of it and I did one for the wall"; "At school we did a topic on the plague and in the topic the fire of London came up so we had to do research on it and my friend and I painted a big picture of the fire"; "Because all the other children went to York and when they came back everybody had to make a folder and I had to make one too"; "We went on holiday from school to Bognor Regis and we saw HMS Victory, it was very interesting to look around it"; "I got the idea of its being HMS Victory from a School Venture trip we all went to see the Victory then we went to a Museum"; "I remembered because the school went to visit York and I saw the horse and coach and I remembered"; "A man from the Sealed Knot came to school dressed as an 18th century grenadier. I thought he looked similar to the picture"; "We had done some work about it at school from a book and every two weeks we had a television programme and I recognised the clothes and the children" (Hogarth's 'Graham Children); "I went to Blenheim with a school trip and read about it in "Famous Generals" - I reckon the soldier was taken from that book"; "I got a book out of the library because we were doing a project on the history of the railways"; "I learned about cave paintings from a lesson in school on our Man project". "We had a tape at school and some music books called Kings and Things"; "We done it in Geography in a lesson about the sun and how the Earth began" (Teacher: we have done some work on theories of the earth's evolution") "We did a topic at school on Joan of Arc and I have my own book on her, we also have a collection of books at school".

It was notable how many children had retained the impression of a lesson, a visit or a film over a long period

of time: "I saw a film about a year ago with rifles identical to the one in the picture"; "Mrs. N. read us a story when we were in her class about the fire of London.."; "I went (to HMS Victory) about four years ago with my family, on a trip"; (The San Fransisco Fire). Teacher: "An intelligent child with good general knowledge and memory, he saw it several years ago on television"; "I think it (the fire of London) was for a story we had to do back in early 1977. Mr. C, the class teacher went on and on about it, telling us that it started in Pudding Lane - that I recently visited"; "I'd read a book (about Dick Turpin) which got me interested about two years ago and a book at home last year"; "I saw a documentary about a year ago and it had the great fire of London on, and I remembered it"; "I have seen many films of the crusades of King Richard I in the past..."; "We saw a picture of some Pompeii buildings in a topic on volcanoes a few years ago"; "Well last year, about in the middle of the year we saw the Laughing Cavalier on BBC2"; "I remember my teacher describing the picture (The Light of the World) last year in assembly"; Teacher: "Steven has seen picture postcards of the Coliseum; he tells me that he was told about it in his previous class"; "We did a topic on fossils four years ago. I remembered the ammonite from the topic I did that term"; "I was watching a film last Easter and it showed that Persians' great empire"; "I remember that the Civil War was on a television programme last year"; "I first learned about the Magna Carta from a book of Anthony Price's in one of the Infant classes. The book was called "Famous Kings and Queens of England"; "I knew that the Queen's surname was Windsor because my Mom told me that when I was young so I already knew". The teacher's comments frequently mention a child's "retentive memory".

Frequently, a chain of research was started from an initial stimulus: "I went to the War Museum at Arromanches

with the school. I enjoy reading books about war and trying to learn the real facts"; "I saw a film on television and the war of American Independence - which the film was about - interested me, so I looked it up in the Library"; "I saw the films 'Zulu Dawn' and 'Zulu' and read about the Zulu wars, so I know a bit about it"; "I saw an ammonite on holiday, when I got home I found out what it was in the school library"; "The story of the film was about the Yanks and the Southerns in which they were praising the Yanks. The first book told you both points of view"; "Reading mine and my dad's book and seeing several films" (on the American War of Independence); "I have a Ladybird History book on Samuel Pepys. I also saw it on Blue Peter and the 'London Experience'; "I read a series of three books, the Iliad of Homer, Odyssey of Homer and the Aeneid of Virgil (Teacher: "an insatiable curiosity"); "We have done documents and research work, all at school. Documents by people who knew Joan, such as the Duke of Alencon and Louis de Coutes and research work to help us answer the document questions"; "We have seen slides at school and documents and seen films about Joan of Arc".

It was noticable how often children had remembered an effective spoken description: "Mrs. R. told us about Xerxes' soldiers with their wicker shields; I immediately recognised the man as a Xerxes' soldier"; Teacher: "One of the stories which I read to Michael and his class was called 'The Great Fire' by Monica Dickens. All the children loved it and it 'fired' their imaginations enough to do some art work on it - black silhouettes of buildings with red and orange sky" (the fire of London) "Deborah was helped by the radio broadcast"; "...the sound effects and eye-witness account of the BBC programme made it memorable"; (Illuminated manuscript) Teacher: 'This piece of knowledge was gained from a discussion of words, not specifically from any History lesson"; "My mother told me the name (ammonite) once"; "When I was watching a programme about the American Civil War

my Dad started to tell my brother about it and I listened"; "My dad was reading a book from the library about it and I asked him about the (American Civil) War. I learned a little from that"; "I remembered my teacher describing the picture ('Light of the World') last year in an assembly"; "In an assembly once I heard a story of David and Goliath. When the teacher came to Goliath he told us a description of a Philistine soldier and I thought it looked like one".

There were many indications by teachers that the materials used for the project and its tests created a new interest for some children who had not previously shown much interest or ability. For example, on brass rubbing; "A pleasant, average girl not having shown any previous real interest in history"; a visit to the London Science Museum: "This boy has not shown any previous particular interest in history; rather a comedian"; again on brass rubbing: "Not normally a very perceptive child"; "Darren is a slow reader but very interested in his History"; "Joanne has been keenly interested in and stimulated by this work"; (The Fire of London): "I thought of this answer because I could see that there were a lot of flames and all the sky was red and orange"; Teacher: "a slow boy, who has the occasional inspiration"; "The crew's quarters of a pirate ship"; (Teacher: "not a particularly able boy - just above average, not a wide reader"); "Last year I visited HMS Victory at Portsmouth. It was very interesting. I recognised the picture from the guide book" (Teacher: "Remedial child"); "I read about the battle of Blenheim from a book called "Famous Land Battles", which I find very interesting" (Teacher: Wayne is a very quiet boy in class, slightly below average he is quite good with reading English generally and is very interested in History"); "David has become very interested in History and has developed keen powers of observation". Normally however the more typical teacher comment was "a lively mind and a good memory; he is an avid reader; he is an excellent reader and has a very wide general knowledge; an extremely bright boy, absorbing information all the time" or "She has a keen interest in most subjects and a good general knowledge".

Occasionally, though not often, reference was made to knowledge acquired through the material of the project itself: "Andrew says that the lesson (on the American Civil War) came during the time given to the Awareness of the Past project"; "I recalled that my teacher had read a story in religious education. And also I remembered it in a Mr. West test"; "I saw a mosaic at your Saturday morning school"; "We saw some arrow-heads when Mr. Potter visited the History Club"; "We talked about Joan of Arc in some lessons we had on Child's Awareness"; "The comic I read was all about America. I also heard about it in a C.A.P. lesson at school"; Teacher: "Children showed a tremendous interest in Joan of Arc, simply because of the new sort of approach, it must have been because of their interest that they responded to the document in such a way"; "Dick Turpin is on our timeline. Also the television programme helped".

There was evident pleasure among children who had recognised pictures and matched them with another version of the same picture previously seen in a book. "I saw a film about a year ago about the D-day landings. It showed photos and a drawing like the one in the test"; "It was on one of the James Burke television programmes. It showed a picture about the civil war which was like the picture we saw in the history test"; "I used to collect fossils and a book I got had a picture in it like the picture on the test sheet"; "I had a book called The Three Musketeers and I remembered the pictures of the musketeers and it looked just like one of them"; "We did some things on the fire of London and I saw that picture in a book"; "The fire of London happened to be in one book in History, it showed you a picture like the slide"; "The picture I saw on the slide and in the book looked the same"; "It was like a picture in my reading book"; "When I looked at a picture in the book of the Fire of London the picture was exactly the same and I remembered it when it came to doing the test". (Teacher: He brought this book to school after the test to show the class".) Evidently a great

deal of interest could be aroused by more deliberate matching of both well known and unfamiliar pictures in children's researches.

Not all the sources memorable to children were ephemeral. Many of the references to television programmes mentioned adult series on BBC2: "Nationwide", "Roots" and the "Connections" programmes were popular choices mentioned as often as were "Blue Peter" and school-television programme such as "Out of the Past". The latter series' programme on Georgian England had inspired seven or eight children from the same class and enabled them to identify Hogarth's picture (no. 27) as "Georgian". Amongst the many books referred to as sources of pictures and information, encyclopaedias were the most usual single choice. Some teachers have expressed misgivings about the value of the sort of information portrayed to children by the popular media. Certainly some of the sources quoted were ephemeral and the items of information gleaned occasionally more trivial than the more portentous historical events listed on page 233, where the Table shows very limited acquaintanceship with more serious affairs.

Young children, it is true, appear to assimilate from comics, popular television programmes, family visits and books, more appreciation of things, of famous people, inventions, popular pictures such as the Light of the World and the Laughing Cavalier or of costume and uniform, than they do of great historical incidents - though evidently some of these, such as the American Civil War, have been persistently and memorably proffered by the media. The child who wrote: "I got the idea of using 'aerodynamics' from a television programme called 'Flambards' "or another who "read an encyclopaedia" which had an article in it about frescoes and murals" cannot be casually dismissed as dealing only in ephemera.

Nor is it fair to infer any criticism of schools or

teachers from the discovery that 65% of all information and experience of relatively well-known items is gleaned from sources outside school. This is the result of a merely quantitative count. It may well be that the 35% of the memorable material acquired in school is of a richer quality or of greater significance that many children's more trivial recollections. It is, nevertheless essential that teachers come to terms with the information explosion detonated hourly by the media and learn to appreciate the wealth of detail that is available to curious, observant and receptive children of every range of ability and reading age. There is no doubt that modern children draw upon a considerable body of experience and general knowledge of adult historical stereotypes. Family 'background' and parental motivation are important in this process; the wealth of family visits which supplements and extends the useful programmes which many schools afford is an impressive growth area. But television - including BBC2 - has made an even more considerable impact upon vicarious experience: it is not essential for a family to own a car or enjoy academic and cultural qualifications for the average child to become aware of Xerxes, Pepys, George Washington, Lord Nelson or General Eisenhower. It is certain that no modern Primary school teacher can, or should endeavour to stock 100% of the child's information bank in school. Rather, the limitations of the "35% factor" should be welcomed and put into a new perspective so that the 65% of dross and of pure gold can be sorted and organized into a more meaningful pattern in school, by teacher and children together. Certainly the 65% available to the child should be assumed and accepted by the teacher in beginning to add and teach to it. It is unproductive of any teacher to begin by assuming, on any topic whatever, that he is in a position of enlightening a class's total ignorance. Someone in the class <u>will</u> already know what a mosaic is, who the Black Prince was, the name of the diarist, the inventor, the cosmonaut or dinosaur, how to paint with oils, or lay out the battlefield of Waterloo, and

will wish to make his contribution to the learning of his classmates and teacher.

Again, inevitably, we come to the essential role of the teacher. Teachers in the pilot group have, in many cases, grown to accept that their function has changed in relationship to the project's classes. More helpful than any of the DES reports and surveys in enlightening this new position is the Bullock Report, which not only confirms the essentially linguistic basis of the Dudley project but also offered teachers much positive advice as to methodology, classroom practice and teacher's role. "What then of ways in which verbal interaction can be organised to extend the pupils' ability to handle language? Throughout the primary and middle years the change of emphasis from teaching to learning has meant that talk now occupies a position of central importance. This is not, of course, to suggest that the classroom of the past operated simply on the principle that the teacher talked and the pupils listened, and that their output was through the medium of the pen. Nevertheless, new patters of classroom organisation have changed the balance, so that primary school children spend more time discovering for themselves and talking about their discoveries. The teacher's role in this is vitally important and very demanding; for it is not enough to assume that, given a wide range of activities in a lively primary classroom, the child's language can be left to take care of itself. There is obviously great value in providing opportunities for children simply to talk freely and informally on whatever interests them, and nothing we say should be taken as detracting from this. But although such talk may serve many useful purposes it will not necessarily develop the children's ability to use language as an instrument for learning. The important question to ask is whether demands are being made upon their language by the nature of the problem and the process of arriving at a solution to it.

Children need to represent to themselves and others what is being learnt, and a study of tape transcripts will show that in any group learning activity this is not an automatic outcome. It is even less likely to happen where children work individually through assignment cards or worksheets" (42).

The report sees the total integration of language with all other learning activities as absolutely essential: "The primary school teacher responsible for the whole or most of the school-work of his class already has it in his power to establish a language policy across the curriculum. Whether or not he is taking that opportunity will depend upon the extent to which the various uses of language permeate all the other learning activities, or to which, on the other hand, language learning is regarded as a separate activity.... For language to play its full role as a means of learning, the teacher must create in the classroom an environment which encourages a wide range of language uses... how often does a child share his personal interests and learning discoveries with others in the class? How far is the teacher able to enter such conversations without robbing the children of verbal initiative? Are the children accustomed to read to one another what they have written, and just as readily listen? Are they accustomed to solving co-operatively in talk the practical problems that arise when they work together? How much opportunity is there for the kind of talk by which children make sense in their own terms of the information offered by teacher or by book?" (43).

Certainly, the flexible timetable of the normal primary school classroom's integrated day, guided and directed by one

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42. A Language for Life: Report of the Committee of Inquiry appointed by the Secretary of State for Education and Science, under the Chairmanship of Sir Alan Bullock FBA. Department of Education and Science. London HMSO 1975. para 10.10 pages 144-145.

43. Ibid. para 12.3 pages 188-189.

well-known class teacher, is an advantage to be prized, not lightly changed or abandoned. Suggestions for uneasy compromise with subject specialisation are rarely effective, in practice, over the long term: inevitably the success or failure of such arrangements depends more upon harmony of personalities than upon any wealth of extra qualification or enthusiasm. These latter attributes can often be seen to be counter-productive. Dr. Burstall in her original work on Primary School French made this point definitively in the most specialised of Primary school subject areas: "Shortage of staff was also often reported to lead to over-specialisation regarded as 'contrary to the normal policy of the school' and a source of strain for the teachers concerned" ....."In some cases attempts have been made to ease the staffing situation by the employment of part-time French assistants, but these attempts did not always achieve satisfactory results" (44).

Dr. Burstall had distinguished six categories of Primary school teachers likely to undertake the teaching of French: (1) the class teacher only; (2) class and French teacher to one class only; (3) class teacher who is French teacher to more than one class or to a class other than his/her own; (4) French specialist on the school staff; (5) visiting teacher and (6) class teacher only in a control school. Of her sample of 510 teachers: 42% were in category 1; 6% in category 2; 22% in category 3; and 6% in categories 4/5. Two additional categories (7 and 8) accounted for the remaining 24%. Of these the "positive attitudes" to the problems of teaching French to a full ability range were significantly lower for category 1 than for all other teachers and the attitude scores for categories 3, 4 and 5 were significantly higher. The class teachers who were actively

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44. French in the Primary School: Clare Burstall (NFER 1970) page 65.

engaged in teaching French to one or more classes tend to include capabilities of the less able pupil in a more encouraging light" (45). Even so, Dr. Burstall was persuaded that: "it should be possible to provide class teachers who have no qualifications in French with an in-service training programme which would enable them to teach French effectively to their own classes. It is clear that if all class teachers were able to teach French to their own classes the problems caused by the introduction of French would be substantially reduced" (46).

Yet French is only more evidently 'specialised' in that it deals in a foreign language, where failure to understand or communicate is immediate and absolute. The languages of Mathematics, Science and History are only deceptively more familiar for being spoken in English. As Dr. Burstall's recommendation implied, and at least one L.E.A. proved, an adequate in-service training programme of individual class teachers is more creative than any amount of provision of 'special responsibility' posts. Even colleagues who are music advisers, will go a long way in this direction to provide alleged 'non-musicians' with adequate in-service training to accompany their own classes.

The opposite advice of the DES Primary survey is misleading; it already creates considerable personal and professional tensions in many schools. To assume that: 'advice and guidance from a specialist, probably another member of staff, may be enough. In other cases, more often with older than with younger children....it may be necessary for the specialist to teach either the whole class or a group of

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45. French from Eight; A National Experiment: Clare Burstall. NFER. Occasional Paper No. 18 (Slough 1968) pages 29-31.

46. Primary School French: C. Burstall
French in the Primary School: page 35.

children for particular topics. In some cases, specialists may have to take full responsibility for the teaching of a class or classes other than their own....." (47) assumes too readily an adequate availability of 'specialists' in too many fields. It also over-states the adequacy of some 'specialism'. Too many responsible and well-meaning young teachers with minimal professional qualifications in History are now engaged in tricking out new "syllabuses", "schemes" and "guidelines" which depend entirely on 'doing' a formidable Primary school obstacle course 'from Plato to NATO' - or worse a predetermined fragment of such a course. In such cases it is not surprising, though "...disappointing to find that the great majority of teachers with posts of special responsibility have little influence at present on the work of other teachers" (48).

Subject qualification, influence and enthusiasm can be communicated in a friendly, active team-teaching situation, more particularly if the school is provided with an adequate programme of in-service training workshops, preferably school-based, and with a more than adequate store of teaching materials, primary sources and reference books. Expertise is more effectively communicated by teachers working alongside each other than separately. Such arrangements strengthen and consolidate the valuable position of the 'all-subject' class teacher instead of demolishing his weakest positions. LEA's need more teachers who are willing to learn from each other rather than those who desire to impart their expertise to others: advice to and training of teachers comes more acceptably from an active LEA advisory service. Those teachers who assume that participation in a process-centred project of discovery and experience demands an impossibly high standard of

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47. Primary Education in England. op.cit. para 8.42 page 118.

48. Ibid: para 8.45, page 119.

subject specialisation misunderstand the process. The misunderstanding is even greater amongst those who assume that by such participation they abdicate their essential teachers' role. Again we turn to the Bullock Report for a useful definition of the new role implied by the Dudley pupils' classroom activities.

"The teacher's role should be one of planned intervention, and his purposes and the means of fulfilling them must be clear in his mind. Important among these purposes should be the intention to increase the complexity of the child's thinking, so that he does not rest on the mere expression of opinion but uses language in an exploratory way. The child should be encouraged to ask good questions as well as to provide answers, to set up hypotheses and test them, and to develop the habit of trying out alternative explanations instead of being satisfied with one. This is unlikely to be managed easily in the full class situation, where the teacher has an obvious problem.....Small group work.....provides the security which encourages the less articulate to claim a greater share of the exchange. It is important that the teacher should spend time with each of the small groups to guide the language into fulfilling its purpose. "Guidance" is not used here in the sense of dominant intervention; indeed receptive silence is as much part of it as the most persuasive utterance. The teacher has first to be a good listener, letting his genuine interest act as a stimulus. His questions will encourage the pupils to develop or clarify points in their thinking, or take them beyond it into the contemplation of other possibilities" (49).

The teacher's role is a subtle and essential one, far more so than in crude terms of his "specialist knowledge" or

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49. A Language for Life: op.cit. para. 10.11, page 145.

"expertise". The suggestion, rarely, but occasionally made, that in assuming a neutral chairmanship, in permitting the development of unsupervised peer group discussion and accepting the implications of the children's ready-made experience and general knowledge, a teacher abdicates his essential role is totally unsound. Yet the subtlety of the role can be explained in simple terms about effective actions. Firstly, the teacher's task is to explain clearly the nature and aims of the project based upon the investigation of first-hand evidence. He needs to take essential precautions in this explanation, of avoiding the children's possible confusion about activities and discussions which could appear to be, or become, aimless. It is therefore essential, above all, that each class teacher be fully acquainted with the nature of the investigation, the materials and the concepts to be developed. He requires a thesaurus of essential terms such as "primary, secondary, authentic, contemporary, bias, realistic, original, evidence, document, facsimile, etc.," with full explanations of each term and its possible meanings for children. He needs to be fully informed as to the content and nature of every item of source material which he is expected to use; all such factual matters as dating - evidence, origin, provenance, authorship and inbuilt clues must be clearly and readily available in the text of a handbook. Certain items should also be especially designated as particularly useful for special purposes; for example, those objects which conceal minute but visible dating evidence; those pictures which are the most typical of a given school of istorical art or narrative painting, or which embody the spirit of an age or attitude, whether it be medieval superstition or Hogarthian cynicism. Thus the teacher should never be put into a vulnerable position by material which is inadequately explained to him. A small selection of necessary tests and check-lists should also be offered so that he may, as he wishes, evaluate achievement and estimate the extent of children's understanding or additions to their store of knowledge. It cannot be assumed that the individual class

teacher, nor even the combined team of teaching staff in any Primary school can be fully responsible for the choice and provision of adequate teaching materials for a study of historical evidence. Even the most active and enlightened Teachers' Centre, essential for such LEA provision, will require substantial additional Authority support in advisory service and funds. Certainly we must agree that "At the present time it is often beyond the competence of the teacher and the resources of the school to assemble primary source material of a sophisticated and complex nature...." (50).

In such a project a major part of the teaching role is adequate selection of materials for use. The teacher must be able to prepare items of evidence for a special purpose and list precisely those new elements of vocabulary or fact which he intends the children to acquire by their own process of discussion, observation and deduction. He must on no account assume that every available item of evidence is equally useful for every possible purpose. The selection of a manageable number of structure cards, those most meaningful for a given object or story, is an essential part of preparation. To dump the entire pack of question cards on a group is meaningless. He must in the course of this process constantly adjust his own appreciation and understanding of exactly where the margins and present limits of the children's language and understanding lie, and make immediate decisions on where they should be extended, if at all. For example, the teacher, given a prehistoric implement, should be prepared to gauge how many and which, if any, of his class would be prepared to use such words, on an ascending scale of complexity, as: tool, weapon, flint, prehistoric, stone age or Paleolithic. The last might in some ten-year old classes

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50. A Language for Life: op.cit. para. 10.11 page 145.

be the only word lacking in the group's vocabulary; or the teacher might be surprised.

Finally, the teacher's planning and preparation must take into account the prediction of the necessary stage when "rounding-up" of current group-work should take place. In the case of difficult "non-starter" items it might be necessary for the teacher to take over the initiative at an early stage: with other items he might better preserve an air of mystery, secrecy and expectation. The rhythm of the process is entirely at the experienced class teacher's discretion. Some have found that a fast turnover of several items at once, is preferable; others use a more relaxed, steady progression from object to story to document. Occasionally, the need for a quick round-up of necessary and available vocabulary may be an initial stage; in other cases the total vocabulary can safely be left to be put together as a final joint exercise by the whole class.

It is impossible to recommend time-limits beyond a rough outline of "no more quickly than a weekly rotation of different items, no more slowly than an item per half-term", with teachers' 'round-up' sessions at variable intervals between such extremes. In every case the teacher has to reach his own decision as to how long he is prepared to allow trial and error to continue before he intervenes. Prompting questions to a group such as "are you sure, are you satisfied with that clue, that explanation?..." will be more useful than premature exposition.

As important as preparation, planning and systematic intervention is the teacher's function of encouragement, more particularly of juvenile groupleaders. In this respect the most pertinent expertise of the typical Primary school leader lies in his understanding of the individual personalities and the group dynamics of his class. He must be prepared to experiment in group formation and regrouping. Often the

mistake is made of assuming that the receptive listener in a group achieves nothing, or that the dominant member is the best group leader. Certainly it is legitimate for the uncertain teacher to remove disruptive minorities from the process of group discussion, either temporarily or permanently, to give quieter members a chance of group leadership, note-taking or adjudication on arguments: a system of gaming rules in these situations is usually acceptable to groups of children.

It is undeniable that the uncommitted or discouraged teacher can stop or subvert the entire process. "Well let's get on with this business" is a rare approach, occasionally reflected by poor pupil performance; "I have learned nothing" probably echoes a teacher's failure to encourage and stimulate a class. Some objects, pictures and documents are less obviously exciting at first glance; extra encouragement by the teacher is invaluable in these cases; hidden meanings and almost invisible clues can arouse children's flagging interest. Above all, if the children have the impression that this activity is one that their teacher feels is important and purposeful, the process will go well.

Available time is certainly the crux of the entire problem of a teacher's assimilation and dissemination of any project. No interference was offered in Dudley, unless assistance was requested, in the classroom practice of individual teachers. Although this policy had the desirable effect of reducing teachers' tension, one was always aware that significant omissions were inevitable. For example, the concentric scheme of work offered at the outset of the project as a suggested framework for the project (51) was not extensively adopted, except in those cases where suggested topics or lesson content matched the school's normal

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51. See Appendix V pages 523 - 525.

practice. The amount of 'free' time available to the topic could not be stretched indefinitely beyond the tests and their follow-up.

The project put out roots less obtrusively into the normal timetable of English lessons throughout the week: a sense of deep satisfaction was consistently expressed with the possibilities and reality of regular language development based upon the evidence. Otherwise, one was often aware that traditional projects, patches and development studies were frequently added to the 'History' timetable. This inevitably reduced time available for the study of evidence and group discussions. Many teachers expressed doubt about the 'loss' involved if they abandoned traditional 'History' lessons or favourite topics altogether in favour of the project. Children, some felt, might not 'learn' enough from the project alone. Nor was insistence upon a relatively content-free concentration on the process of learning fully accepted by all teachers.

A small but persistent loss was the failure of most schools to take up certain suggested exercises, particularly in mathematics, which might have improved performance with time-placing; several exercises were suggested and occasionally demonstrated with pilot classes. For example, the sense of personally recollected time could be enhanced by a teacher's collection of 'I Remember' kits spanning the eleven years of the children's own lives. These could include photographs, press cuttings, record sleeves, popular songs, pre-decimal coins, Jubilee souvenirs and many other significant objects. Practice with such things, guessing how many years ago they were in familiar use, could sharpen the children's sense of the immediate past. Otherwise as the tests show, moon missions and "old money" are long forgotten and rarely recalled by ten-year-old children. Similarly, collections could be made, as some classes have

done, of scrap books classifying all types of evidence, such as samples of newsprint and newspaper titles, rubbings and engravings of all sorts, picture postcards, postmarks and postage stamps of different reigns and other points of reference or dating evidence.

A positive result of specific teaching was the careful attention given by several schools when it became apparent that children of this age generally appeared to have little if any experience of paintings. They seemed unable to distinguish between the reproduction of a painting and that of any other type of coloured picture, and certainly had no knowledge of different schools or genres of paintings. The picture collection contains many examples of famous narrative paintings and teachers were advised to apply special attention to the children's viewing of those slides. The table of result s show considerable progress on the part of the pilot-group, more particularly in certain schools, in comparison with the control schools, in their growing ability to recognise paintings shown 'n tests.

Whether enough classroom attention was given to mathematical practice, the subtraction of dates to find age, the calculation of duration or the scale of the time chart in the fourth year, is doubtful. Certainly no adequate results were shown with the association of numbers with periods and events at the end. Indeed, so wild was the guesswork in the final document tests, where otherwise able children were capable of attributing irrelevant numbers ra nging from 5,000,000,000 to 100 years to the prehistoric period (the most popular estimate being 4,000 B.C.) that little, if any, progress appears to be feasible at this age. This is surely one of those areas of the project where more systematic and regular practice might be expected to show significant improvement, where it is certainly necessary.

The two most contentious or problematic areas to teachers remained the non-chronological nature of the proposed method and approach and the insistence upon unsupervised peer-group discussion (52). More progress was made in the latter case; several schools set aside special withdrawal areas for group-work, furnishing essential 'projection corners' and reference booths. Here again however, the major consideration was time rather than space. The work requires a rhythm of withdrawal and private study which is relatively undeveloped so far in the average Primary school, where classes are manouevred en masse 'to save time', 'to keep together' or 'to supervise progress'. In terms of the project, the concept of the teacher's function in 'rounding-up' the group work of a previous week is essential.

It seems that the present more didactic process of teach and learn must be reversed, the children's guided learning being followed by teaching of salient common points, checking of errors and confirmation of successes encountered. To many teachers this order of progress is unacceptable. Yet it was discovered at the outset of the project, during the feasibility trials that 'in any case where a final answer was inadvertently given by the teacher this has tended to thwart and end the children's own efforts' (53).

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52. For a perceptive view of a pilot class in action during the early stages of the project see:
An Evaluation of the first year of the Dudley Education Department Project "The Child's Awareness of the Past". Jenny Rogers. Dissertation for B.Ed. North Worcestershire College. 1977, particularly pages 16-22 and 24-26.
A later evaluation based on first-hand observation of three pilot classes at work is given in History Handed Over: Philip Dutton. M.Ed. Dissertation, University of Newcastle-on-Tyne. 1980.

53. Young Children's Awareness of the Past: John West. Trends in Education. Spring 1978. page 11.

The project can be envisaged in terms of story-discussion, object handling and picture-viewing, continuing on an on-going basis in groups, in units of one to two weeks at the teacher's discretion, with children regularly withdrawing from other normal class activities to take their turn with the evidence and coming together as a class with the teacher at the end of the groups' rota. Unfortunately, teachers find such withdrawal easier in terms of individual 'workbook' sessions, which tend to isolate each child with a set of prosaic questions, to be answered silently. There is, as yet, in the Primary school far too little opportunity - too little time - for small groups of children merely to look at pictures or listen to evidence and discuss these cogently. Many a child, one senses, is actively prevented from dwelling on what a picture shows him, the technique, the form and colour, by the urge to 'get on' or to answer more specific, mundane questions. We must continually reaffirm that "the teacher creates the contexts for learning and is a crucial part of the learning environment, but he is no longer the only source of wisdom.....pupils can also learn from their peers in small discussion groups" (54).

More contentious was the project's main principle that historical evidence is not encountered in chronological order, so that a deliberate process of sorting, setting and sequencing must be developed. The final test results appear to indicate quite clearly that no order of curriculum, neither chronological nor random order will do much to change children's fundamental ability to order and sequence time cues. The pilot group's significant 10% overall increment above the control group's was hard-earned and not always entirely dependable. Despite the pilot group's extra practice with timeline and dating evidence they were, on occasion, overtaken by the control children, more particularly when an

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54. Talking, Writing and Learning 8-13: Margaret Mallett and Bernard Newsom. Schools Council paper 59. (1977).

example was particularly abstruse. There is, among teachers, a strong faith in the idea of chronological order, though very few schools, as we have seen in Chapter I , make a consistent effort to arrange all historical material chronologically from class to class, nor even from term to term. Their concentration is actually more upon content than chronology; it is the priority of the process which involves a random, though less haphazard, movement from era to era which confuses teachers. Inconsistently they see the possibilities of 'fragmentation' more clearly here than in their own random choices of projects which are usually in no set chronological order. The fact must be faced that it is the children's concept and verbal expression of authenticity which can benefit and improve more evidently than their developing idea of 'time'. The latter we can assume they have, sufficient to work confidently with material from all sorts of past situations and eras, but it cannot be much 'developed' with undated materials or an inadequate mathematical concept. Most teachers using the project's materials will intend to group and set these into themes and periods. The index to the slide collection is a useful indicator of the 'patches' which lend themselves to a thematic approach; the First World War; the medieval period; nineteenth century children; inventions; homes and shops; soldiers; the life of Christ; the Renaissance; the Bayeux Tapestry, prehistoric man; ships; space travel and many more can all be matched with stories, pictures, documents and artefacts. The danger is thereby that teachers and class return more and more to the factual content of the document and the philosophy of the worksheet rather than to a more critical examination of the documents as evidence, capable of confirmation or contradiction one with another.

This raises an important consideration, the required degree of historical specialisation required by the teachers of Primary school classes. Repeatedly, as new materials were

introduced term by term, the teachers were unconfident of their knowledge of the material content of the new stories and pictures or documents. They were less aware of their possible inability to develop the necessary process of the evidence - the illustration of bias, the nature and relative value of incomplete evidence, the internal indications of hindsight or exaggeration, of prejudice or inadequate information. The project materials were always compiled with adequate contents, bibliographical references, dates and other data for the teacher's information. Teachers were thus continually reas sured that they would not be presented with unfamiliar material which would remain unidentifiable. Nevertheless, the further reassurance that no more knowledge was required than what the document portrayed did not convince many teachers for very long. To refer to the Bayeux tapestry they felt, we must first, as teachers, know enough about the Norman Conquest to ensure that the pupils will not know more; these attitudes will die very hard, if at all, in English Primary school classrooms. The average Primary School teacher is over-conscious of not being 'a specialist' and cleaves to manageable content in a way which must restrict the most able children's progress and understanding, as it restricts the strength and quality of the evidence which the teacher is prepared to offer for investigation. It is ironic that it is a sense of inadequate specialisation which forces Primary School teachers to insist more on knowledge.

It was reassuring to read, as a result of the Department of Education and Science survey of Primary Schools in 1978 (55), a Science H.M.I.'s list of the attitudes and skills which should be required of any Primary School science lesson. One was reassured to find that these requirements matched exactly the objectives of our 'History' project.

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55. D.E.S. Conference for LEA Advisers on the Primary Survey and held at North Worcestershire College of Education January 1979 by A.J. Rose H.M.I., North Midlands Division (Leicester).

It required only the change of the word 'science' to 'history' in two cases and 'laboratory' to 'classroom' in one for the 'Science' skills to be entirely applicable to the development of essential learning skills and attitudes in History.

There is no complete corpus of specialised knowledge required of the average Primary School teacher, but preferably an understanding of the necessary basic process of the child's learning. As the Primary Survey suggests: "These uses of core activity to promote learning in connection with another could be considerably extended. This was particularly so in such basic skills as calculating and measuring which were seldom applied to work on historical, geographical or even scientific topics. Similarly, more could be done, particularly with older children, to encourage them to follow a line of argument, to evaluate evidence and alternative points of view, or to reach judgments in the course of discussion, and in their own writing" (56).

It seems evident from the nature of the pilot school teachers' enthusiasm for major parts of this project that confidence is most easily established through the mention of 'language across the curriculum' and its acknowledged importance. We shall do better to refer teachers again to the Bullock Report's concept of planned intervention than to the need for special qualifications.

It was evident, throughout the project, that the advantages of the teaching materials provided were fully appreciated, sufficiently indeed to ensure their regular use. At the lowest possible level of take-up the Primary school History curriculum could be significantly improved by judicious and frequent reference to the 150 stories and 270 slides

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56. Primary Education in England. op.cit: para 5.3 page 41.

provided. An important feature of the tests has been to demonstrate that the test materials themselves are equally useful, and more attractive, as teaching aids rather than as test exercises. This applies as much to the early sequence cards as to the stories, slides and documents. One young teacher, impressed by the interesting ranges of the sequence pictures exclaimed: "I could go off on a lot of lovely tangents from these!" This does not necessarily imply complete fragmentation of the syllabus. As discussion bases, as practical exercises is dividing and physically re-arranging the pictures, with or without a class time line; as individual prompts to group work, each group taking one picture to research and report back; as invaluable vocabulary exercises, producing such words as 'Monk'; 'medieval'; 'antique telephone"; 'cavalier'; 'infantry-man'; 'grenadier'; and 'cathedral' these are useful cards. There is no doubt that considerable content will in fact be communicated by regular use of suitable materials.

The final watchword of this curriculum was adequate expectation of children's abilities at the ages of 7 - 11. We must, as teachers, be continually aware of the wide world of knowledge and experience which opens itself to modern children in out-of-school situations, more particularly through television, holidays, travel and hobbies. It is no longer necessary, as it may have been in 1927 "to make them conscious of the limitations of their knowledge..." (57). As early as 1931 the Hadow Report was more prepared to advise that: "During the early years, up to the age of 11, the greater part of the imagery with which children do their thinking has been acquired, not in school, but out of it.... the teacher needs to converse with children about the most

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57. Primary Education: Suggestions for Teachers: Board of Education. London H.M.S.O. 1927 page 8.

obvious aspects of their daily life before he proceeds to erect a superstructure of more intellectual knowledge..." (Contrarily, this paragraph begins by stating that "the working contents of the average child's mind on entering the Primary School are likely to be far more limited than most teachers assume"). The Report reminded teachers that "With the piano, the gramophone, the wireless and the illustrated magazine and paper, there are opportunities for arousing the child's aesthetic interests, in however crude a form. Often too, the father will encourage the children to take an interest in his trade, or at least have manual and mechanical hobbies of their own" (58). (Plus ça change, plus c'est la même chose!). Continually it was necessary to reassure individual teachers that children would not utterly fail to make the necessary response to certain difficult stimuli. At the earliest stages of the project, when the pilot pupils were seven years old, the content and style of the stories selected for the anthology caused some dissension. It was evident that the teachers' usual choices of stories for general reading to and by the children were, at this age, fairly superficial, commercial stuff, at best of the fairy story type. Frequently, the challenge was posed: 'the stories are too difficult for the children'. Two points of criticism were usually made, firstly of the vocabulary of unfamiliar words; secondly of the archaic style of the primary source. Frequently it can be pointed out by actual word-count that difficult words are in fact few and can either be 'edited out' of the document in the telling or explained to the children. Some phrases: 'grazing off the grizzled back of the deer', or 'arrows nailing the Frenchmen's helmets to their heads' fascinated the younger children.

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58. Report of the Consultative Committee on the Primary School. Board of Education. H.M.S.O. 1931. pages 41 and 57.

particularly if delivered by the story-teller with feeling and action. Much of the meaning of these difficult words can be conveyed by expression or mime in the telling.

The usual response - carried out on five separate occasions - to the 'too difficult' challenge was for the project director to request the opportunity to tell the seven-year-olds one of the most abstruse of the anthology's contents 'The Death of William Rufus' as narrated by the medieval chronicler Ordericus Vitalis. To start with it appeared to surprise some teachers that the children would be more receptive sitting comfortably around the story-teller on the floor rather than at desks. This story - the alternative is that of the Battle of Crecy as told by Froissart - is a compelling one and children invariably respond to the cameo of the busy king sitting amongst his minions having his hunting boots laced to his outstretched legs, insulting the querulous monk of Gloucester, deriding the superstitious Saxons, acting out the mysterious business of the six brand-new arrows with the cryptic: 'Do as I told you Walter'.... ('He killed hisself', gasped one seven year old boy). Given clues such as this, directed to individual children for them to remember and repeat when called upon; given the initial idea of a mystery killing and the challenge 'see if you will discover, as detectives, who <u>really</u> killed the King', there is no possibility of this complex story leaving the youngest children cold. Indeed, every class so taught inevitably produced all the possible solutions - the simple accident, the ambitious brother Henry's motive, the vengeful, evicted Saxons, the inexplicable suicide ritual, none has been missing at seven years of age. The project was concerned throughout with high expectations of children of average ability.

Similarly, in previewing the selection of test pictures, the possibility of children of 8 - 10 recognising Christ in

Holman Hunt's 'Light of the World' (actual result 55% of recognition); the Fire of London (actual result 71% of recognition) the Nativity scene (73% of recognition) or the ruined Parthenon (51% recognition), were typical instances of teacher's underestimation of the children's understanding, proved wrong in the event of the tests. Occasional incidents, though overly anecdotal, are nevertheless revealing as, for instance the boys at school ST, who realised that the German infantry in test slide 10 were from the First not Second world war because they made 'miniature soldiers' and therefore knew that the rear 'valance' of the coalscuttle helmet was deeper in the neck, that their rifles were 'longer' and their equipment less compact than those of later Wehrmacht soldiers. Similarly, to the majority it was evident that test slide 13 is an interior, museum replica of a street not an out-of-doors reality, because of the yellow quality of the electric lighting, the absence of shop assistants or customers, the cleanliness of the paving stones, the posed appearance of the car and bicycles and many other clues. In the same way, during the feasibility tests the six year olds had inevitably identified a modern replica by the presence of plastic glue at certain joints. We must not underestimate these children; they must be allowed to pool their expertise, their conjectures and their general knowledge in small group discussion.

The children's aptitude to unsupervised group situations and even, on the part of carefully selected group leaders, an individual child's ability to monitor and prompt the discussion of his or her peer-group is another aspect of high teacher expectation, which in the event presents no insurmountable obstacle. Scoring and note-taking, in order to record the progress of the discussion, becomes a simple routine with practice, given adequate preparation of scoresheets and checklists beforehand. There is no doubt that a group of children working unsupervised along the lines suggested, with the materials provided, will gain and learn from the experience,

provided that this is recapitulated by the teacher in due course.

"In this way children learn to get along together, to help one another and realise their own strengths and weaknesses, as well as those of others. They make their meaning clear by having to explain it to others, and gain from opportunities to teach as well as to learn. Some children are so timid and inarticulate that they need to hear their companions put to teachers the questions they themselves are unable to frame. Apathetic children may be neglected by the enthusiasm of a group, or decide to sit back as idle passengers, a danger which the teacher needs to watch. Older children benefit from being caught up in the thrust and counter thrust of conversation in a small group of children similar to themselves....." (59).

The classroom organisation of a normal Primary school need not be grossly disrupted by this activity; problems of adequate withdrawal space will arise, but the flexible timetable of the Primary school day offers adequate opportunity for such group-work if space permits it. The siting of a separate table for group discussion may arouse the attention of neighbouring groups, if a curious new object is introduced for the first time, but this is a problem which presents itself only as long as the mode of work is novel to the class. Unsupervised discussion fits easily into a practical session and will cause no continuing distraction in a normally active classroom. To those classes where even the offering of a hand-lens creates unwonted curiosity problems are likely to be more prevalent.

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59. Children and Their Primary Schools: A Report of the Central Advisory Council for Education (England): Department of Education and Science. London HMSO. 1967. Vol. 1. page 757. pages 274-5.

The methods of active group participation, are, after all, not at all unfamiliar in the normal First school, there one usually finds many examples of group organisation, role-play and the sort of individual and group responsibility required for active discussion. In many infant schools it is commonplace for one child to take a group through a series of flashcards, to organise a group discussion or to plan play or other activity; these activities are already part of the normal classroom organisation. "Learning takes place through a continuous process of interaction between the learner and his environment which results in the building up of consistent and stable patterns of behaviour, physical and mental. Each new experience reorganises, however slightly, the structure of the mind and contributes to the child's world picture"... "Children can also learn to be passive from a teacher who allows them too little space in managing their own affairs and in learning. A teacher who relies only on instruction, who forestalls children's questions or who answers them too quickly, instead of asking the further questions which will set children on the way to their own solution, will disincline children to learn" (60).

There can be no serious contention that the materials and methodology of the project could be deemed entirely 'content-free'; that is, essentially, a relative term. The stories, pictures and documents chosen as source material have a strong traditional content of English history: the index to the slide collection shows these to be capable of strongly thematic or period arrangement. It would have been interesting to have devised and set a factual test to the six hundred pilot school children, in order to discover what factual knowledge they had assimilated and retained from the regular use of those source materials. There can be no doubt

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60. Ibid: paras 521, page 192 and 530, page 193.

that, for example, strong and regular attention was paid to the details of the Norman Conquest, to standards of living, particularly in childhood, and family life of the Victorian age. The Pharaohs of Ancient Egypt, the history of warfare, especially the first World War, the life of Christ, the early development of the USA, the mission of Joan of Arc and other more general aspects of life during the Middle Ages, were all repeatedly investigated. The materials could easily be arranged and set together as period sets conducive to chronological sequence if a school so desired. The chronological outline and the relative degree of success experienced by the pilot and control pupils is shown in the graph on page 233.

The fundamental philosophy of the project was more concerned with process than with content: this was a question of emphasis rather than of dogma. It is impossible to learn without reference to the content of the materials used. What is suggested is that the content should be subordinate to the process: we learn of the evidence of the Bayeux Tapestry rather than learning the facts of the Norman Conquest illustrated by a few pictures. The main purpose of the project was the acquisition of concepts of evidence, of authenticity and of contemporaneity. "Applying these considerations to the problem before us, we see that the curriculum is to be thought of in terms of activity and experience rather than of knowledge to be acquired and facts to be stored" (61).... "To put the point in a more concrete way, we must recognise the uselessness and the danger of seeking to inculcate what Professor A.N. Whitehead calls inert ideas - that is, ideas which at the time when they are imparted have no bearing upon a child's natural activities of body or mind

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61. Report of the Consultative Committee on the Primary School: op.cit. para 75. page 93.

and do nothing to illuminate or guide his experience" (62). "As to these activities and that experience the project aimed to develop those skills, of observation, deduction, reasoning and judgement which are most suited to the Primary stage of child development: "After the age of seven they (children aged between seven and eleven) were less unquestioning, more disposed to be incredulous, from wonder tales their interest tended to pass on to true narrative history. Other witnesses were equally emphatic as to the "curiosity" of children at this age, describing it as a "ruling principle". Their matter-of-fact attitude of mind produced a spurt of enquiry into the causes of the many phenomena by which they found themselves surrounded. Curiosity, constructiveness, the love of acquisition and self-assertion, with its opposite self-submission, these were therefore the powerful products which had to be judiciously satisfied" (63).

The arrangement and addition of evidence in terms of its content and particular relevance must be left to the individual Head teacher and his school. In its present form the body of objects, stories, slides and documents is incomplete. More should be added to illustrate particular fields of local history in particular localities; there was too little development of the archeological evidence of sites and fieldwork. Family history could also have played a larger part, by use of all the available multifarious family documents and pictures. There is more to be done in terms of written records kept by children, notetaking of discussion, imaginative reconstruction in the forms of story, diary or chronicle. What is essential is that the primary sources be collected first and nothing 'taught' by didactic generalisation that has not first been scrutinised as evidence, for its own sake.

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62. Ibid. para 74 page 92.

63. Ibid. para 44 page 54.

Finally, it is evident from the work of so many children over a period of six years that the materials and methods of the Dudley project can be used productively with Primary school children aged seven to eleven, in the confident belief that the concepts and skills required are capable of development at that age. "To say that the basic concept of a subject must be acquired before we can become active is misleading, to misunderstand the process" (64). It has already been observed (65) how consistently Piaget and his followers under-rate the skills and understanding of the concrete operational stage and thus of the Primary school child generally. We have seen how others have denigrated their ability in logical thinking: "concrete thinking in respect of history could be said to begin in the twelfth year" (66); "from seven to eleven there is still no consistent or conscious use of reason. Truth means whatever conforms with the spoken word of the adult....a frightening thought for teachers" (67) - frightening indeed and frighteningly wide of the mark. Nor can we, in the light of these test results, generalise as confidently about the formal ability level of an entire year group. As we have seen, an eleven-year-old class will include as many as 55% who are capable of the complex skills and concepts required to cope with primary source material in a practical perceptive manner. Of these as many as 5%, one or two in every class however 'deprived' the neighbourhood or school will be observing and reasoning on a fully adult scale.

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64. Talking, Writing and Learning 8-13. op.cit. page 221.
65. Concept of Time in Young Children. Kathleen Henry op.cit. page
66. Logical Thinking in History. R.N. Hallam Education Review of University of Birmingham. Vol. 19. 1966-7 page
67. Piaget's Theory and Primary School Social Studies. A.H. McNaughton: Educational Review, University of Birmingham Vol. 19. 1967. pages 24-25.

A complex series of abstruse tests has convincingly demonstrated that Primary school children can bring to bear a more than adequate resource of skills in observation, language, deduction, and in many cases complex formal reasoning than is usually implied by the term 'concrete' stage. Discovery and experience is their natural mode of operation and they can be guided by skilful teachers to productive results of their investigations. Their lively sense of curiosity and their deep sense of empathy with people and human situations is an attractive feature of their thinking about the past. They have a sense of time, they are capable of a full and rich awareness of the past. Their abilities should not be underestimated. Teachers should, in the light of the pilot schools' performance over the four year testing programme, be encouraged to return to the practical idealism of the Plowden Report, confident in their ability, teachers and children alike, to organise exciting intellectual discovery at their own high level.

"Free and sometimes indiscriminate use of words such as discovery has led some critics to the view that English primary education needs to be more firmly based on closely argued educational theory. Nevertheless great advances appear to have been made without such theory, and research still has a long way to go before it can make a marked contribution. At many points even so fruitful an approach as that of Piaget needs further verification. What is immediately needed is that teachers should bring to bear on their day to day problems astringent intellectual scrutiny. Yet all good teachers must work intuitively and be sensitive to the emotive and imaginative needs of their children. Teaching is an art and, as long as that with all its implications is firmly grasped, it will not be harmed by intellectual stiffening" (68).

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68. Children and their Primary Schools. op.cit: para 550, page 201.

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